FAS-PASS

Maths

DETAILED SOLUTIONS

Test Booklets 1-12

KA2501-KA2512

AUTHORS

Dr SHEREEN A. KHAN & Dr FAYAD W. ALI

FAS-PASS
Maths

PRACTICE TESTS FOR SEA MATHEMATICS

DETAILED SOLUTIONS

TEST BOOKLET 1

TEST CODE KA2501

AUTHORS

Dr SHEREEN A. KHAN & Dr FAYAD W. ALI

2025-2028 ASSESSMENT FRAMEWORK

SECTION 1(20 marks)

1. We represent the numeral 482 615 using a place value chart as follows:

100 000	10 000	1 000	100	10	1
4	8	2	6	1	5

The digit '8' has a place value of 10 000, and its value is 80 000.

482 615 = 400 000 + [80 000] + 2 000 + 600 + 10 + 5

Answer: 80 000

2. We represent both numerals in a place value chart and compare the digits starting with the largest place value.

Notice the first two digits are the same in both numbers. So, we move on to the third digit and compare their values.

In 504 268 this is 4 and in 500 628 this is 0.

100 000	10 000	1 000	100	10	1
5	0	4	2	6	8
5	0	0	6	2	8

Since 4 > 0, then

504 268 [>] 500 628.

Answer: >

3. To round 45 454 to the nearest hundred, we first identify the hundreds digit

45 454 (shown in red)

The digit to the immediate right of the hundreds digit, which is the tens digit, is the deciding digit. In this case, it is 5. Since it is more than or equal to 5, we add 1 to the hundreds digit and replace all the digits after the hundreds digit by 0.

The result will therefore be 45 500

Answer: 45 500

4.

Tens	Ones	tenths	hundredths
2	4	3	6

The first digit after the decimal point is the tenths digit. In the given number this is 3. So, the tenths digit is 3.

Answer: 3

5. 20% as a fraction is $\frac{20}{100}$.

We divide both the numerator and the denominator by 20 and the fraction reduces, in it lowest terms, to $\frac{1}{5}$

Answer: $\frac{1}{5}$.

6. We sum the values of the given coins.

2 x 50 cents = $1.00

1 x 25 cents = $0.25

1 x 10 cents = $0.10

2 x 1 cent = $0.02

Total = $1.37

Answer: $1.37

7. (94 – 82) =12

On the number line here are 6 equal intervals between 82 and 94.

Hence, each interval represents 12 ÷ 6 = 2

Counting in two's from 82 to 94, we have: 82, 84, 86., 88, 90, 92, 94.

A is the 4th position on the line counting from the left, starting at 82. It is also the 2nd position counting from the right starting at 94. The number in position A is 90.

Answer: 90

8. Frederick's age = $\frac{2}{9}$ x 54 = 12

$$\frac{2}{\cancel{9}_{1}} \times \frac{\cancel{54}^{6}}{1} = 12$$

Answer: 12

9. The number of $\frac{1}{4}$ cups that can be filled from $3\frac{1}{2}$ litres

$= 3\frac{1}{2} \div \frac{1}{4} = \frac{7}{2} \times \frac{4}{1} = 14$

Answer: 14

Alternatively
There are 4 quarters in 1 whole, so
one litre of milk can fill 4 cups
3 litres can fill 12 cups
$\frac{1}{2}$ litre can fill = 2 cups
So $3\frac{1}{2}$ litres can fill 12+2 = 14 cups

10. Cost of 3 T-shirts at \$25 each = \$25 x 3 = \$75

Cost of 1 pair of shoes at \$145 = \$145

Total spent = \$75 + \$145 = \$ 220

She paid with = \$100 x 3 = \$300

Hence, the change = \$300 - \$220 = \$80

Answer: \$80

11. Length of 1st pencil = 6 cm

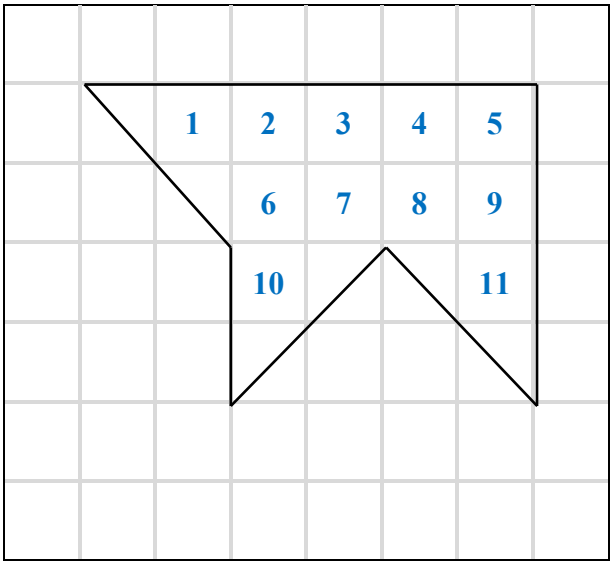
Length of 2nd pencil = 7 cm

Length of 3rd pencil = 8 cm

Total length of all 3 pencils = (6 + 7 + 8) cm = 21 cm

Answer: 21 cm

12. We count the whole squares and the half-squares.



Number of whole squares = 11

Number of half squares = 6

Area = $11 + 6 \times \frac{1}{2} = 11 + 3$

$= 14\ cm^2$

Answer: $14\ cm^2$

13. The total mass on the left pan = Total mass on the right pan

Mass of 2 cubes + 9 g = 17 g
Therefore mass of 2 cubes = (17 – 9) g = 8 g
Mass of 1 cube = 8 ÷ 2 = 4 g

Answer: 4 g

14. 1.25 litres = 1.25 x 1000 ml = 1250 ml

125 ml < 1250 ml

So, in the box we place <

15. All the sides of a square and an equilateral triangle are equal. Hence, these two shapes are regular polygons. An isosceles triangle has only 2 equal sides and in a a rectangle though the opposite sides equal, the four sides are not equal. Hence, we should circle Rectangle and Isosceles triangle.

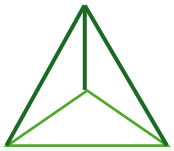
Square Isosceles triangle Rectangle Equilateral Triangle

16. The next shape is 

The pattern unit comprises 5 shapes. Two complete units are shown, and the third unit begins with two diamonds

In the given pattern, only one diamond is drawn after the cross. Hence the next shape is a diamond.

17. The triangular pyramid (or triangular-based pyramid) has 6 straight edges. When all edges are of the same length, it is called a tetrahedron.



Answer: Triangular pyramid or triangular-based pyramid or a tetrahedron

18. Mean of the 4 numbers = 28

Sum of the four numbers = $28 \times 4 = 112$
Mean of the 2 numbers = 34
Sum of the two numbers = $34 \times 2 = 68$
Sum of the six numbers = 112 + 68 =180
Mean of 6 numbers = $180 \div 6 = 30$

Answer: 30

19. Susan's modal score = 8.5

Priya's modal score = 7.9

Adele's modal score = 8.1

Susan had the highest modal score

Answer: Susan

20. Number of students who live less than 1 km from school = 12

Number of students who live between 1-5 km from school = 9

Number of students who live less than 5 km from school = 12 + 9 = 21

Answer: 21 students

SECTION 2 (39 marks)

21. Ten percent is equivalent to $\frac{1}{10}$.

Hence, $\frac{1}{10}$ of the number is 20

The number is $20 \times 10 = 200$

Answer: ☐ $= 200$

Alternatively,
10% of a number = 20
1% of the number = $20 \div 10 = 2$
100% of the number = $2 \times 100 = 200$

(2 marks)

22. Increase in price = $\frac{20}{100} \times 120 = \frac{1}{5} \times 120 = 24$

New selling price = \$120 + \$24= \$144

Answer: \$144

(2 marks)

23.

$$2\frac{12}{24} \quad 1\frac{3}{24} \quad 3\frac{4}{24} \quad 2\frac{6}{24} \quad 1\frac{8}{24}$$

All fractions belong to a common family of twenty-fourths.

Since 12 + 4 + 8 = 24, the fractions are $2\frac{12}{24} + 3\frac{4}{24} + 1\frac{8}{24} = 6 + \frac{24}{24} = 6 + 1 = 7$

Answer: $2\frac{1}{2}$, $3\frac{1}{6}$, $1\frac{1}{3}$

(2 marks)

24. The fraction shaded in each shape:

A - $\frac{2}{8}$ or $\frac{1}{4}$ B - $\frac{2}{4}$ or $\frac{1}{2}$ C - $\frac{2}{6}$ or $\frac{1}{3}$ D - $\frac{2}{8}$ or $\frac{1}{4}$

Answer: A and D have the same fraction shaded.

(2 marks)

25. Overtime rate = $\$30 \times 1\frac{1}{2} = \$45$

Overtime earnings = $\$45 \times 3 = \$135$

Basic wage per week = $\$30 \times 40 = \$1\,200$

Total earnings for that week = Basic wage + Overtime earnings

Total earnings = \$1 200 + \$135 = \$1 335

Answer: \$1 335

(3 marks)

26. Number of pencils bought = 100 packs of 12 = 1 200

Cost Price of 120 pencils = $\$10 \times 100 = \$1\,000$
Selling price of one pencil = \$2
Selling price of 1 200 pencils = $\$2 \times 1\,200 = \$2400$

Number of markers bought = 50 packs of 8 = 400
Cost Price of 50 markers = $\$12 \times 50 = \$600$
Selling price of one marker = \$3
Selling price of 50 markers = $\$3 \times 400 = \$1\,200$

Total cost price of pencils and markers = \$1 000 + \$600 = \$ 1 600
Total selling price of pencils and markers = \$2 400 + \$1 200 = \$ 3 600

Profit = Selling Price − Cost Price = \$3 600 − \$1 600 = \$2 000

Answer: \$2 000

(3 marks)

27. Number of roses in each bouquet = $\frac{1}{3}$ of 18 = 6

Number of lilies in each bouquet = 18 – 6 = 12
Total number of lilies in all the bouquets = 156
Number of bouquets = 156 ÷ 12 = 13
Number of roses in 13 bouquets = 6 roses × 13 = 78 roses

Answer: 78 roses

(3 marks)

28. 3 erasers and 4 pencils cost = $70
7 erasers and 2 pencils cost = $90

Counting all the erasers and pencils we have:
10 erasers and 6 pencils cost $70 + $90 = $160
Dividing by 2 we get
5 erasers and 3 pencils will cost = $160 ÷ 2 = $80

Answer: $80

(3 marks)

29. Monday : $2\frac{1}{4}$ hours = (60 minutes × 2) + 15 minutes

= (120 + 15) minutes = 135 minutes

Tuesday : 125 minutes

Since 135 > 125, Monday's job took the longer time by
(135 – 125) minutes = 10 minutes

Answer: Monday by 10 minutes

(2 marks)

30. Volume of box = (15 × 10 × 4) cm^3 = 600 cm^3

1 cm^3 of sand weighs = 2 grams
600 cm^3 will weigh = 2 grams × 600 = 1 200 g

= (1 200 ÷ 1000) kg
= 1.2 kg

Answer: = 1.2 kg

(2 marks)

31. Volume of medicine taken per day = 5 ml × 3 = 15 ml
Number of ml of medicine in the bottle = 165 ml
Number of days the medicine will last = 165 ml ÷ 15 = 11 days

Beginning date: June 17th .
If she started on the 17th then she will have 10 more days left, so she will finish on June (17+10)th or June 27th

Answer: June 27th

(3 marks)

32. Total length of wire = (13+5) cm × 2 = 18 cm × 2 = 36 cm

Perimeter of square = 36 cm

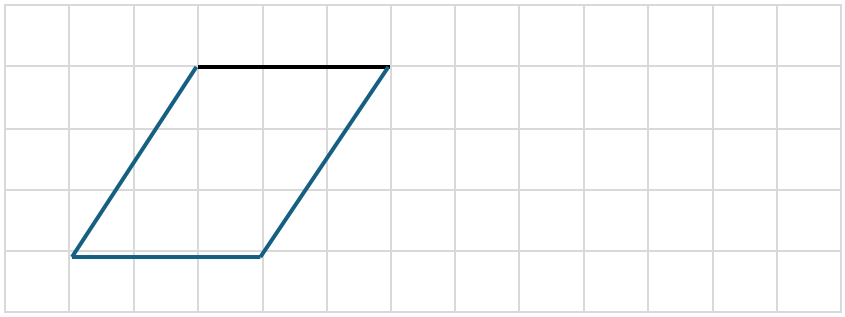
Length of one side of square = 36 cm ÷ 4 = 9 cm

Area of square = (9 × 9) cm^2 = 81 cm^2

Answer: 81 cm^2

(3 marks)

33. **There are several possible answers, one example is shown.**



(2 marks)

34. Similarity: Both are 3-dimensional figures with triangular faces.

Difference: The prism has a pair of parallel faces of the same shape and size while the pyramid has no parallel faces.

OR

In the pyramid the number of faces (4) is equal to the number of vertices (4).
In the prism the number of faces (5) is not equal to the number of vertices (6)

OR

The pyramid has an apex while the prism does not.

(2 marks)

35. The modal score is 6 without entering the new scores. Since the mode changes after entering two new scores, the new scores cannot be 6.
This leaves 5, 7 and 8 as possible answers.
The frequency of the new mode must exceed 14 after entering the new scores. The frequency of 7 can be at most 10 + 2 = 12 and the frequency of 8 can be at most 11 + 2 = 13, neither of which will exceed 14. However, if the two new scores were 5 – the frequency of 5 will now be 13+2 = 15, which will become the modal score.

Answer: 5 and 5

(2 marks)

36. Total Number of customers = 400+360+220+580+440=2000

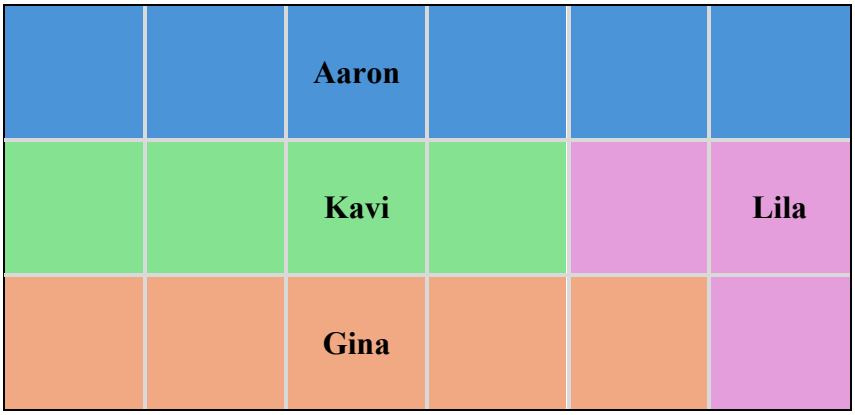
20% of 2000 = 400
Colours chosen by at least 400 customera are those with frequencies of at least 400. Hence Red (400), Pink (440) and Yellow (580) will be selected for re-stocking.

Answer: Red, Pink and Yellow

(3 marks)

SECTION 3 (16 marks)

37.



The whole has 18 equal parts. Hence 1 part represents $\frac{1}{18}$ of the total number of shares.

Aaron gets one-third of the whole = $18 \times \frac{1}{3} = 6$ shares

Remaining shares = $18 - 6 = 12$

Kavi gets one third of the remainder, so Kavi gets: $12 \times \frac{1}{3} = 4$ shares

Remaining shares = (12-4) = 8

Gina gets five-eighths of the remaining 8 shares.

So Gina gets $8 \times \frac{5}{8}$ = 5 shares and Lila gets the 8-5 = 3 shares left.

The diagram shows how the shares were distributed.

Aaron $\frac{1}{3}$, Kavi $\frac{2}{9}$, Gina $\frac{5}{18}$, Lila $\frac{1}{6}$

(4 marks)

38.

Name of Region	Area in cm^2
A	64
B	32
C	$21\frac{1}{3}$
G	16

Area of large square = (16×16) cm^2 $= 256$ cm^2

The four equal-sized squares shown will each have an area of $256 \div 4 = 64$ cm^2

Region A represents one-quarter of the large square

Area of region A = 64 cm^2

Region B represents one half of a square whose area is 64 cm^2.

Area of region B = 64 cm^2 $\div 2 = 32$ cm^2

Region C represenrs $\frac{2}{6}$ of a square whose area is 64 cm^2

Area of region C = $64 \times \frac{2}{6} = 21\frac{1}{3}$ cm^2

Area of region G = $64 \times \frac{1}{4} = 16$ cm^2

(4 marks)

39.

Figure Number	1	2	3	4	5
Number of blocks	1	6	18	40	75

a)

Figure No.	No. of blocks	Pattern
1	1	1×1
2	6	$(2\times2) + (2\times1)$
3	18	$(3\times 3) + (3\times 2) + (3\times1)$
4	40	$(4\times4) + (4\times 3) + (4\times 2) + (4\times1)$
5	75	$(5\times5) + (5\times4) + (5\times 3) + (5\times 2) + (5\times1)$

b) Based on the pattern in part (a), the number of blocks in the first layer is calculated by squaring the figure number. For the 10^{th} layer, this will be $10\times10 = 100$.

The pattern also shows that the number of layers is equal to the figure number. The completed sentence is:

The number of blocks in the first layer is 100 and the number of layers is 10.

(4 marks)

40. Total Number of units for town B = Mean × Number of households

= 380×50 = 19 000

Total Number of units for town C = Mean × Number of households

= 350× 48 = 16 800

Total Number of units for towns A, B and C = 24 800 + 19 000 + 16 800 = 60 600

1 unit of electricity costs 10 cents

60 600 units of electricity cost: 60 600 × 10 cents

$$= \$\frac{60\,600 \times 10}{100}$$

= $6 060

Answer: $6 060

(4 marks)

END OF TEST

FAS-PASS
Maths

PRACTICE TESTS FOR SEA MATHEMATICS

DETAILED SOLUTIONS

TEST BOOKLET 2

TEST CODE KA2502

AUTHORS

Dr SHEREEN A. KHAN & Dr FAYAD W. ALI

2025-2028 ASSESSMENT FRAMEWORK

SECTION 1 (20 marks)

1. We first write the numeral in a Place value Chart.

100 000	10 000	1 000	100	10	1
1	7	1	1	1	7

Writing this in expanded notation:

Answer: $(100\,000 \times 1) + (10\,000 \times 7) + (1000 \times 1) + (100 \times 1) + (10 \times 1) + (1 \times 7)$
OR the terms may be simplified to

Answer: $100\,000 + 70\,000 + 1\,000 + 100 + 10 + 7$

2. To compare the place values, we write the numerals in a Place Value Chart

100 000	10 000	1 000	100	10	1
		7	2	3	9
	2	3	5	8	6
5	6	2	3	7	1

In 7 239 the 3 is in the 'tens' position and has a value of 3 x 10 = 30

In 23 586 the 3 is in the 'thousands' position and has a value of 3 x 1000 = 3 000

In 562 371 the 3 is in the hundreds position and has a value of 3 x 100 = 300

The highest value among 30, 3 000 and 300 is 3 000

So, 3 has the highest place value in the number 23 586

Answer: 23 586

3. $125 \div 25 = 5$. Hence there are 5 groups of 25 in 125

Answer: 5

4. The numeral in the 'tenths' position is 8. It will be unchanged if we round down or increased by one if we round up. Our decision depends on the value of the digit to the immediate right of the tenths digit.

   This digit is 3 and is the deciding digit. Since 3 is less than 5, we round down and the tenths digit remains the same. All digits after the tenths are now discarded to give the rounded figure as 19.8.

   Answer: 19.8 correct to the nearest tenth

5. One 50 cent coin = 50c x 1 = $0.50
   Three 25 cent coins = 25c x 3 = $0.75
   Four 10 cent coins = 10c x 4 = $0.40
   Seven 5 cent coins = 5c x 7 = $0.35
   Total = $2.00

   Answer: $2.00

6. $\frac{55}{100} \times 200$

   = 110

   Answer: 110

7. $\square + 2\frac{3}{8} = 4\frac{1}{8}$

   $\square = 4\frac{1}{8} - 2\frac{3}{8}$

   $= \frac{33}{8} - \frac{19}{8} = \frac{14}{8}$

   $= 1\frac{6}{8}$ which reduces to $1\frac{3}{4}$

   Answer: $1\frac{3}{4}$

8. We can multiply 28 by 4 to get 112. In so doing, we have shifted the decimal point two places to the right (one place for each number).

The product has to be adjusted by shifting the decimal point 2 places to the left.

This will give 1.12

Answer: 1.12

9.

5 x 5 = 25
6 x 6 = 36
7 x 7 = 49

Hence the square numbers between 27 and 50 are 36 and 49 only
Answer: 36, 49

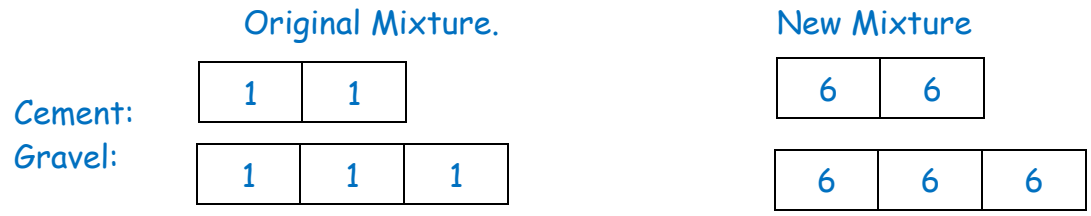
10. The number of buckets of gravel increased by 6 times to 3 x 6 = 18.

Therefore, the number of buckets of cement will increase by 6 times to 2 x 6 = 12

Cement	2	?
Gravel	3	18

Therefore, the amount of cement required for 18 buckets of gravel will be 12.

Alternatively, We can also show this in a model:



Answer: 12

11. One end of the fish is at the 1.0 cm mark and the other is at the 2.2 cm mark.

Hence, the length of the fish = 2.2 – 1.0 cm = 1.2 cm.

Therefore, the length, in mm = 1.2 x 10 = 12 mm (1 cm = 10 mm)

Answer: 12 mm

12. Centimetres are used for small distances while kilometres are used for longer distances. So, the metre will be the most appropriate unit of measure

Answer: B (metres)

13. 2 litres = 2 x 1000 = 2 000 ml

So, amount required by the rest of the day = (2 000 – 750) ml

= 1 250 ml OR 1.25 litres

Answer: 1 250 ml OR 1.25 litres

14. In one day, the artist works for 6 hours = 6 x 60 = 360 minutes

She takes 15 minutes to design one card

Therefore in 1 day she designs 360 ÷ 15 = 24 cards

In 5 days, she will design 24 x 5 = 120 cards

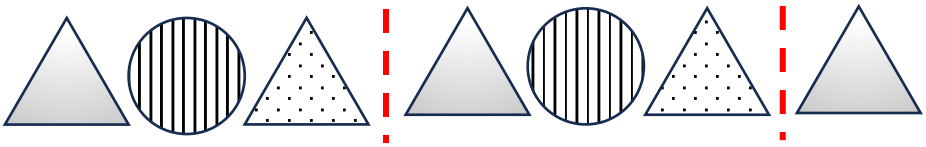
Answer: 120 cards

15. The base of a square pyramid will require 4 straws and the 4 slanting edges will require 4 straws. Hence, the figure would be a square-based pyramid

Answer: A square-based pyramid

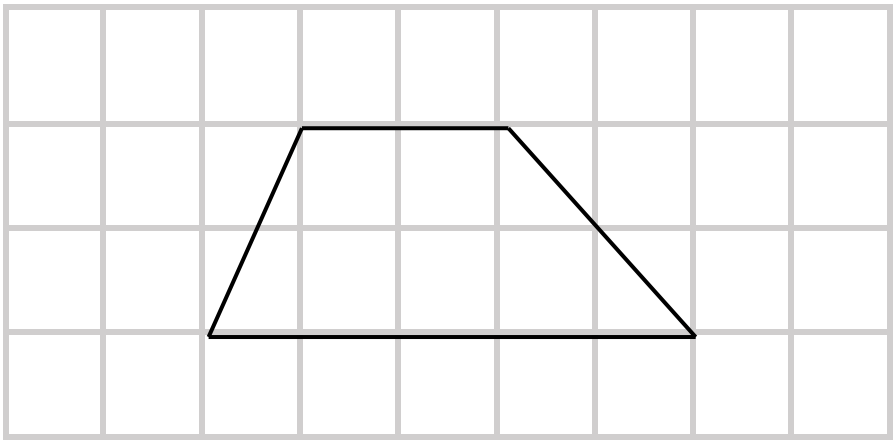
16. The pattern shows a shaded triangle followed by a striped circle followed by a dotted triangle which repeats itself. The pattern core or unit comprises three shapes

Only 2 completed repetitions of these are shown.



Answer: 2 repetitions

17. The quadrilateral would be a trapezium with unequal angles. Many different figures could be drawn. One such figure is shown below Answer:



18. The five sectors are all equal in size but sectors 1 and 3 occupy two-fifths of the circle while the three 2's occupy three-fifths of the circle.
Hence, 2 is most likely to occur.

Answer: 2

19. From the chart, the frequencies are:

Bus = 15, Car = 12, Maxi = 16 and Walk = 7

Total number of students = 15 + 12 + 16 + 7 = 50.

Hence the percentage who walk will be $\frac{7}{50}$ x 100 = 14 %

Answer: 14%

20.

Score	Frequency
2	2
3	3
4	4
5	6
6	3

Both 3 and 6 have the same frequency of 3.

Answer: 3 and 6

SECTION 2 (39 marks)

21. We can re-write all the fractions as equivalent fractions with the same denominator.

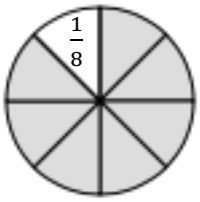
$$\frac{8}{9} = \frac{64}{72} \qquad \frac{7}{8} = \frac{63}{72} \qquad \frac{11}{12} = \frac{66}{72}$$

Comparing numerators, $63 < 64 < 63$

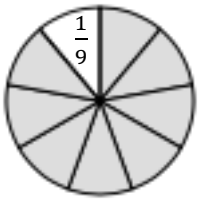
So $\frac{7}{8} < \frac{8}{9} < \frac{11}{12}$

Alternative Strategy

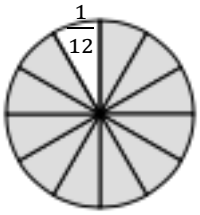
Since each fraction is one unit from a whole, we can compare the unit fractions instead.



$\frac{7}{8}$



$\frac{8}{9}$



$\frac{11}{12}$

Since

$$\frac{1}{8} > \frac{1}{9} > \frac{1}{12}$$

It follows that

$$\frac{7}{8} < \frac{8}{9} < \frac{11}{12}$$

Answer: $\frac{7}{8}, \frac{8}{9}, \frac{11}{12}$

(2 marks)

22. The first light blinks every 4 seconds, while the second light blinks every 6 seconds. The

First Light: 4, 8, 12, 16, 20, 24, 28, 32,36,40,44,48,52, 56,60

Second light: 6, 12, 18, 24, 30, 36,42,48, 54, 60

Both lights blink together after 12, 24, 36, 48 and 60 seconds

Alternatively,

The smallest number that is a multiple of both 4 and 6 is 12.

So, the lights will blink together every 12 seconds

There are 60 ÷ 12 = 5 sets of 12 in 60.

Hence the lights will blink together 5 times every 60 seconds.

Answer: 5 times

(2 marks)

23. The difference in population between

Town A and Town B = 58952 – 55923 = 3029. Difference from 3 000 = 29

Town A and Town C = 56021 - 55952 = 1069. Difference from 3 000 = 1 931

Town B and Town C = 58952 – 56021 = 2931. Difference from 3 000 = 69

The closest difference to 3 000 is 29 which is between Town A and Town B

Answer: Town A and Town B

(2 marks)

24. Number of fully packed boxes = 1200 ÷ 42.

28 boxes and 24 remaining bulbs

	Th	H	T	O
			2	8
42	1	2	0	0
		8	4	
		3	6	0
		3	3	6
			2	4

Alternative method

10 boxes will hold = 420 bulbs

20 boxes will hold = 840 bulbs

28 boxes of 42 bulbs will hold 840 + 336 bulbs = 1176 bulbs

Remaining bulbs = $2000 - 1176 = 24$

The result is 28 packed boxes and remainder 24 unpacked bulbs.

Answer: 24 bulbs

25. 2 hexagons + 3 sectors = 147. 1 hexagon + 3 sectors = 111

We can remove 1 hexagon and 3 sectors from the first drawing and deduce that 1 hexagon = 147– 111 = 36

In the second design, remove the hexagon and deduce that:

3 sectors = 111 – 36 =75

Now divide by 3 to get 1 sector 25.

Answer:  = 36.  = 25

(2 marks)

26. Total mass of Achoy, Bakr and Caliph = 239.7 kg < 240 kg

Total mass of Achoy, Bakr and Denesh = 238.7 kg < 240 kg

Total mass of Achoy, Caliph and Denesh = 240.9 kg > 240 Kg

Total mass of Bakr, Caliph and Denesh = 238.0 kg < 240 kg

Achoy, Caliph and Denesh cannot travel together.

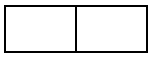
Answer: Achoy, Caliph and Denesh

(3 marks)

27. Three 10-cent coins total 3 x 10 = 30 cents.
Remaining coins total = $3.10 – $0.30 = $2.80
An equal number of 25-cent coins and 10-cent coins total = $2.80
One 25-cent coin and one 10-cent coin total (25 + 10) = 35 cents
Hence, the number of sets of 25-cent and 10-cent coins = 280 ÷ 35 = 8
Therefore, the bags have: 8 + 3 = 11 of 10 cent coins and 8 of 25-cent coins.

Answer: 8 of 25-cent coins

(3 marks)

28. Rose trees 

Dahlia trees 

Since there are 36 more dahlia trees than rose trees, each box represents
36 ÷ 3 = 12 trees

Hence, the number of rose trees = 2 x 12 = 24
The number of dahlia trees = 5 x 12 = 60
Total number of trees = 24 + 60 = 84

Answer: 84 trees

(3 marks)

29.

	m	cm
Table	1 2	 30
Desk	1	90
	4	20

120 cm = 1 m 20 cm

4 m 20 cm = 4.2 m

Answer: 4.2 m

(2 marks)

30. Converting A and B to seconds:

(A) 8 minutes = 8 x 60 = 480 seconds,
(B) 0.1 hours = 0.1 x 60 minutes = 6 minutes = 6 x 60 = 360 seconds
(C) 420 seconds
Since 480 > 420 > 360 the longest time is A, then C and then B

Answer: A, C, B

(2 marks)

31. Counting the number of tiles by rows we get 5 + 5 +3 + 3 + 3 = 19

Each tile costs $7.00. Hence the cost will be $7.00 x 19 = $133.00
Answer: $ 133.00

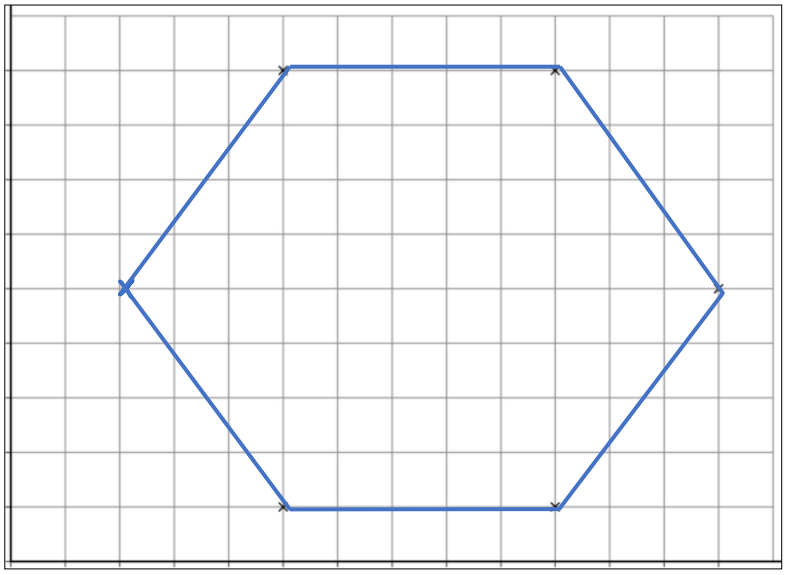
(3 marks)

32. Perimeter = 15 + 2 + 12 + 2 + 27 + 4 = 62 m

Answer: 62 m

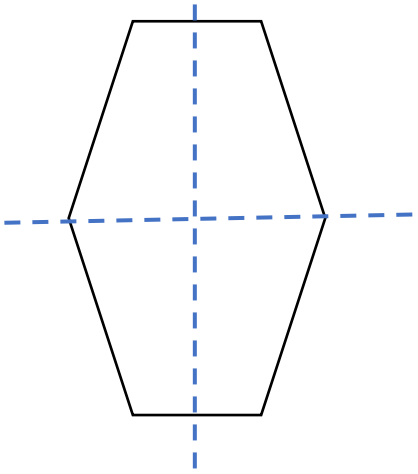
(3 marks)

33.



(2 marks)

34.



(2 marks)

35. Cost of newspapers from Monday to Saturday =$2.50 x 6 = $15.00

Cost of newspapers for the entire week = $2.75 x 7 = $19.25
Hence the cost of Sunday's newspaper = $19.25 – $15.00 = $4.25

Answer: $4.25

(2 marks)

36. Group 1 (A to I): Number of new names starting with letters from A to I = 2 (Gupta and Borneo). So the new frequency for that group will now be 12 + 2 = 14

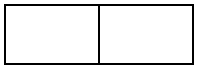
Group 2 (J to R): Number of new names starting with letters from J to R = 0 so the frequency for that group remains as 15

Group 3 (S to Z): Number of new names starting with letters from S to Z = 3 (Yaasir, Sandy and Wu). So the new frequency for that group will now be 7 + 3 = 11

(3 marks)

SECTION 3 (16 marks)

37. We can represent the candies in each bag as follows.

Bag 1 

Bag 2 

Bag 1 is two-fifths of Bag 2

Bag 3 

Bag 3 is one-half of Bag 1

Bag 2 has 72 more candies than Bag 3 and Bag 2 has 4 more parts than Bag 3.
Therefore, 4 parts = 72 and 1 part = $72 \div 4 = 18$

18	18	18	18

So, Bag 1 has 2 parts, Bag 2 has 5 parts, Bag 3 has 1 part
Total number of parts = 2 + 5 + 1 = 8
1 part = 18 candies
8 parts = 18 candies × 8 = 144 candies

Alternative Method
Let's express the number candies in Bag 2 as N
So, the number of candies in Bag 1 = $\frac{2}{5}$ N
Bag 3 will have $\frac{1}{2}$ of $\frac{2}{5}$ N = $\frac{1}{5}$ N
Bag 2 has 72 candies more than Bag 3: N - $\frac{1}{5}N$ = 72 or $\frac{4}{5}$ N =72.
Therefore, N = $72 \div \frac{4}{5} = 90$. So, bag 2 has 90 candies
Bag 1 has: $\frac{2}{5}$ x 90 = 36 candies
Bag 3 has:= $\frac{1}{5}$ x 90 = 18
Total number of candies in all 3 bags = 36 + 90 + 18 = 144

Answer: 144 candies

(4 marks)

38. Route A - from Home to P.O. to Library = 2 km 365 m + 4.75 km

= 2 km 365 m + 4 km 750 m = 7 km 115 m

Route B - from Home to P.S to library = 2.1 km + $1\frac{3}{8}$ km + 3 km 650 m

= 2 km 100m + 1 km 375 m + 3 km 650 m = 7 km 125 m

Difference between Route A and Route B = 7 km 125 m – 7 km 115 m = 10 m

Answer: Route A via the Police Station is shorter by 10 m

(4 marks)

39.

Figure	Number of small triangles
1	2
2	8
3	18
4	32
7	98
30	1 800

(a) Figure is 1 has 1 square and 2 triangles: 2 x (1 x 1) = 2
Figure is 2 has 4 squares and 8 triangles: 2 x (2 x 2) = 8
Figure is 3 has 9 squares and 18 triangles: 2 x (3 x 3) = 18
The number of triangles follows the pattern of 2 x (Figure number)^2
Figure number 4, will have: 2 x (4 x 4) = 32 small triangles
Figure 30, will have 2 x (30 x 30) = 1 800 small triangles

When the number of triangles is 98 then
2 x (Figure number)^2 = 98
So, (Figure number)^2 = 98 ÷ 2 = 49
Hence, the figure number will be 7 since 7 x 7 = 49

(b) Figure 30 will have $30 \times 30 = 900$ squares. Since each square is divided into 2 triangles, number of triangles$= 900 \times 2 = 1\,800$

(4 marks)

40.

a)

A: The highest score is 8.5 and the lowest score is 7.0. We eliminate these and enter the three remaining scores. The mean of these scores is 7.7.

B: The highest score is 8.5 and the lowest score is 7.5. We eliminate these and enter the three remaining scores. The mean of these scores is 8.0

	Remaining three scores	Final Score
A	8.0, 7.5, 7.5	$\frac{8.0+7.5+7.5}{3}=7.7$
B	8.0, 8.0, 8.0	$\frac{8.0+8.0+8.0}{3}=8.0$

b)

There are no repeated scores and all the scores can only take whole numbers or half-points. Hence, to obtain a mean of 8.5 from three judges, C's scores were 8.0, 8.5 and 9.0. Assume these were obtained from Judges 2, 3 and 4. The remaining two judges scores that were eliminated are the highest and lowest scores. So assume Judge 3 gave the highest score of 9.5 (or 10) and Judge 1 gave the lowest score of 7.5 or lower.

	Judge 1	Judge 2	Judge 3	Judge 4	Judge 5
C	7.5	8	8.5	9.0	9.5

(4 marks)

END OF TEST

FAS-PASS
Maths

PRACTICE TESTS FOR SEA MATHEMATICS

DETAILED SOLUTIONS

TEST BOOKLET 3

TEST CODE KA2503

AUTHORS

Dr SHEREEN A. KHAN & Dr FAYAD W. ALI

2025-2028 ASSESSMENT FRAMEWORK

SECTION 1 (20 marks)

1.

100 000	10 000	1 000	100	10	1
6	3	0	9	1	2

Answer: 630 912

2.

100 000	10 000	1 000	100	10	1
1	4	7	5	2	2

The digit 7 is in the 'thousands' position

Answer: Thousands

3. The number represented by the blocks is 100 + 10 + 1 = 111. So, 111 – 20 = 91

OR Remove 2 tens, and 9 tens and 1 one remain = 91

Answer: 91

4. 341 x 23 = 341(20+3) =341 x 20 + 341 x 3 OR

= 6 820 + 1 023 = 7 843

Answer: 7 843

Th	H	T	O	
	3	4	1	
×		2	3	
6	8	2	0	341 × 10
1	0	2	3	341 × 3
7	8	4	3	

5. The total number of triangles = 12

Total number of shaded triangles = 7
Therefore, the fraction of triangles shown shaded = $\frac{Number\ shaded}{Total} = \frac{7}{12}$

Answer: $\frac{7}{12}$

6. Dividing each numerator and denominator by 3 the fraction A, $\frac{3}{18}$, reduces to $\frac{1}{6}$; B, $\frac{3}{27}$, reduces to $\frac{1}{9}$ and C, $\frac{3}{36}$, reduces to $\frac{1}{12}$

Answer: B = $\frac{3}{27}$

7. $\frac{60}{100}$ x 500 = 300

Answer: 300

8. There are 10 equally spaced marks between 350 and 450.

Hence each mark will be (450 -350) ÷ 10 = 10 more than the previous reading.

The arrow is at the 6th mark after 350 and therefore points to 350 + 60 = 410

Answer: 410

9. The tenth digit is 7. The digit after the tenths digit, 6, is the deciding digit.

Since 6 is more than or equal to 5 we round up by adding 1 to the tenths digit to make it 7 + 1 = 8
All digits after the rounded tenths digit are omitted.
This gives 28.8 to the nearest tenth.

Answer: 28.8

10. Two $100 bills = (2 x $100) ÷ $5 = 40 of $5 bills

Three $50 dollar bills = (3 x $50) ÷ $5 = 30 of $5 bills

One $20 bill = $20 ÷ $5 = 4 of $5 bills

Total number of $5 bills = 40 + 30 + 4 = 74

Answer: 74

11. 1 metre = 100 cm

6.32 m = 6.32 x 100 cm = 632 cm

Answer: 632 cm

12. The palm of a hand is about 100 cm^2

A page of an exercise book is about 300 cm^2
The top of a desk is about 3000 cm^2

Answer: B-a page of her exercise book

13. From the calendar the 2nd, 9th and 16th are Wednesdays. The next Wednesday will be the 23rd. So, the 24th is on a Thursday and the 25th will be on a Friday.

Answer: Friday

14. The area of the rectangle = 17cm x 7cm = 119 cm^2

The area of the square = 11cm x 11cm = 121 cm^2

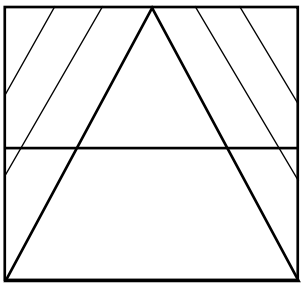
121 > 119.
Hence the square has the larger area

Answer: Square

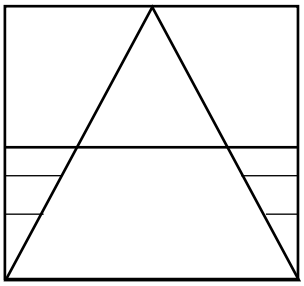
15. A is a cylinder and has a uniform circular cross section.

B is a hexagonal prism and has a uniform hexagonal cross section.
C is a frustrum or truncated pyramid and has a non-uniform cross section because the square base has a different dimension to the square at the top.
Answer: C

16. There are two possible solutions.



OR



17. Time elapsed between 4:00 pm to 5:45 pm
= 1 hour and 45 minutes = 105 minutes.
The minute hand makes $\frac{1}{4}$ of a turn every 15 minutes.
Hence, the number of $\frac{1}{4}$ turns in 105 minutes is 105 ÷ 15 = 7

Alternatively

From 4:00 pm to 5:45 pm, the minute hand makes one and three-quarters of a revolution.

$1\frac{3}{4}$ revolutions = 7 quarters

The minute hand turns through 7 quarter turns from 4:00 pm to 5:45 pm.

Answer: 7 quarter turns

18.

Score	Frequency
2	3
3	3
4	3
5	6
6	2

The modal score which is the score that occurs most often is 5.

The score 5 occurred 6 times and has a frequency of 6 which is more than that of any other score.

Answer: 6

19.

Day	Number late
Monday	7 x 2 = 14
Tuesday	3 x 2 = 6
Wednesday	4 x 2 = 8
Thursday	3 x 2 = 6
Friday	6 x 2= 12
Saturday	2x 2 = 4

More than 6 workers were late on three days-Monday, Wednesday and Friday

Answer: Monday, Wednesday and Friday

20. Time taken by 5 students

80, 75, 80, 65, 90

The mean of the first four scores = (80 + 75 + 80 + 65) ÷ 4 = 300 ÷ 4 = 75
The mean of the five scores = (300 + 90) ÷ 5 = 79

The mean changed from 75 to 79 when the fifth score was added.

The mode of the first four scores is 80
The mode of the five scores is also 80

Hence, the mode remains unchanged.

Answer: Mode

SECTION 2 (39 marks)

21. Value of the 10 circled coins = (4 x 25c) + (3x 10c) + (1x 5c) + (2x 1c) = $1.37.

Value of all 12 coins = $1.67

The difference is $1.67- $1.37 = 30c

If two coins total 30c then one is 25c and the other is 5c

Answer: One 25c and one 5c

(2 marks)

22. Fraction eaten by three girls: $\frac{1}{4} + \frac{3}{8} + \frac{1}{2} = \frac{2}{8} + \frac{3}{8} + \frac{4}{8} = \frac{9}{8}$

The fraction left from 2 pizzas will be $2 - \frac{9}{8} = \frac{16}{8} - \frac{9}{8} = \frac{7}{8}$

Answer: $\frac{7}{8}$

(2 marks)

23. By examination of the place values of the first digit in each number, we note that

1. The populations of Jabar and Katar are close -979 915 and 985 094, difference =5 179
2. The populations of Ambia and Tabad are close -558 482 and 553 285, difference = 5 197

All other comparisons would result in greater differences

Answer: Jabar and Katar

(2 marks)

24.50 cupcakes at $5 each = $5 x 50 = $250

40 pies at $8 each = $8 x 40 = $320

30 doughnuts at $6 each = $6 x 30 = $180

Total = $750

Total required = $ 1 000

Money needed = $ 1 000 - $750 = $250

Answer: $250

(2 marks)

25.Expected number of persons to become infected:

30% of 1 800 = $\frac{30}{100}$ x 1 800 = 540

Expected number of persons to become hospitalised:

10% of 540 = $\frac{10}{100}$ x 540 = 54

Hence 54 people are expected to become hospitalized

Answer: 54 persons

(3 marks)

26.Looking at the second row-Three circles total 45.

Therefore, each circle will have a value of 45 ÷ 3 = 15

Looking at the second column-Two pentagons and one circle total 31

Therefore, 2 pentagons = 31 – 15 = 16

Hence 1 pentagon = 16 ÷ 2 = 8

Looking at the first row-Two triangles and one pentagon total 28

Therefore, two triangles total 28 -8 = 20

Hence 1 triangle = 20 ÷ 2 = 10

Answer:

 = 15  = 10  = 8

(3 marks)

27. Number of girls = $\frac{60}{100}$ x 720 = 432

Number of girls who play netball= $\frac{25}{100}$ x 432 = 108

Remaining number of girls = 432 – 108 = 324

Number of girls who play squash = $\frac{3}{4}$ x 324 = 243

Answer: 243 girls

(3 marks)

28. 5 pens and 4 pencils cost $72

3 pens and 2 pencils cost $42

Consider removing 3 pens and 2 pencils from the first set.

We will be left with 2 pens and 2 pencils and these will cost $72- $42 =$30

Therefore, 1 pen and 1 pencil will cost $15

Jenna has $90 to spend on an equal number of pens and pencils.

For $15 she gets 1 pen and 1 pencil

Number of sets of 1 pen and 1 pencil she can get =$90 ÷ $15 = 6,

Answer: 6 pens and 6 pencils

(3 marks)

29.

	Minutes	Seconds
	51	76
Game 1	~~52~~	~~16~~
Game 2 –	40	53
	11	23

Answer: 11 minutes 23 seconds

(2 marks)

30. Dimensions of rectangle before the square was removed: 8 cm by (5+4=9) cm.
The area of this rectangle would be 8 x 9 = 72 cm^2.
The area of the square that was cut off = 4 x 4 = 16 cm^2
Hence the area of the compound shape shown = (72 – 16) cm^2= 56 cm^2

Answer: 56 cm^2

(2 marks)

31. Amount of pepper sauce on each day increases by 5 ml more each day.
This total will be (5 + 10 + 15 + 20 + 25 + 30 + 35 + 40 + 45 + 50) = 275 mls
This is a total of 10 days and which is inclusive of July 27th which was the first day.
We check 9 days after July 27th
July 27, 28, 29, 30, 31, August 1, 2, 3, 4, 5. This ends on August 5th

Answer: August 5th

(3 marks)

32. If the area of the square = 36 cm^2, then the side = $\sqrt{36}$ = 6 cm

The width of the rectangle = side of the square = 6 cm
Perimeter of the rectangle = 44 cm
We can now find the length of the rectangle
2(Length) + 2(Width) = 44
2(Length) + 2(6) = 44
2 (Length) = (44 – 12) = 32
Length of the rectangle as 32 ÷ 2 = 16
The entire figure is one large rectangle with length 16+6 = 22 cm and width 6 cm
The perimeter of the entire figure = 2 (22 + 6) = 56 cm

Answer: 56 cm

(3 marks)

33. A polygon is an enclosed shape bounded by straight lines. A regular polygon has all its sides and interior angles equal

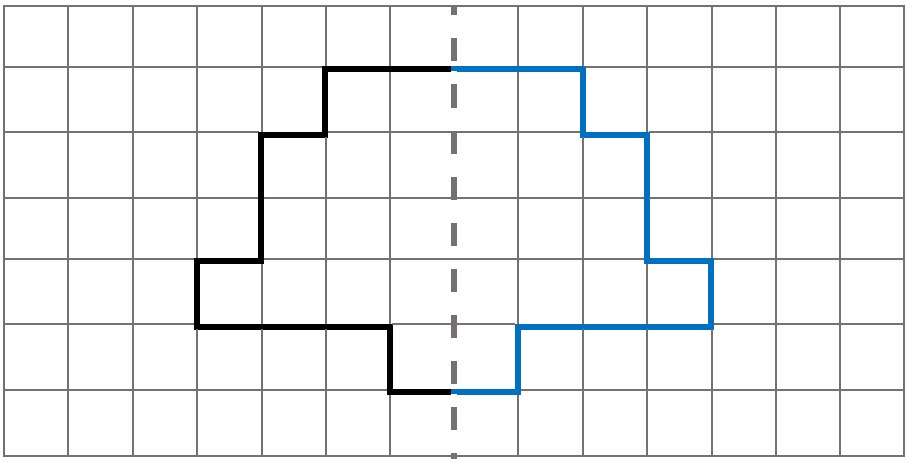
A rhombus has all its sides equal but all its interior angles are not equal.

Answer: Jevon is correct.

(2 marks)

34. The image will be the same distance from the dotted line as the object and drawn on the opposite side as the object.

Since the dotted line is vertical, we can draw the image by checking the appropriate number of units to the right.



(2 marks)

35. The mode is the number that occurs most often.
The mean is the sum of all the numbers divided by the number of numbers.

Set	Mode	Mean
(A) 4,7,7,8	7	$\frac{4+7+7+8}{4} = 7.5$
(B) 8,7,8,5	8	$\frac{8+7+8+5}{4} = 7$
(C) 8,4,6,6	6	$\frac{8+4+6+6}{4} = 6$

In set (C), the mean and mode have the same value of 6

Answer: (C)

(2 marks)

36. Percentage who took the vaccine in Green Hill = $\frac{3500}{7000}$ x 100 = 50%

Percentage who took the vaccine in Sunrise = $\frac{4200}{6000}$ x 100 = 70%

Percentage who took the vaccine in Clear Springs = $\frac{3200}{4000}$ x 100 = 80%

Percentage who took the vaccine in Fairwinds = $\frac{5600}{8000}$ x 100 = 70%

Percentage who took the vaccine in Lakeshore = $\frac{3600}{9000}$ x 100 = 40%

The Health Department should target Lakeshore since it is the town in which the lowest percentage of the population took the vaccine.

Answer: Lakeshore

(3 marks)

SECTION 3 (16 marks)

37. Number of minutes spent on the phone

Day: 15 hours = 15 x 60 minutes Night: 20 hours = 20 x 60 minutes

Plan A

Cost for use during the day = $0.30 x 15 x 60 = $270.00
Cost for use during the night = $0.10 x 20 x 60 = $120.00
Fixed charge = $40
Total = $270 + $120 +$40 = $430

Plan B

Cost for use during the day = $0.20 x 15 x 60 = $180.00
Cost for use during the night = $0.20 x 20 x 60 = $240.00
Fixed charge = $15
Total = $180 + $240 +$15 = $435

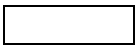
Plan A is $ 5 less than plan B

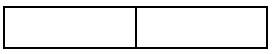
Answer: Plan A

(4 marks)

38. We represent the dimensions as follows:

Width 

Height 

Length 

We note that 1 length + 1 width + 1 height = 2 + 1 + 1 = 4 units
The entire frame comprises: 4 lengths + 4 widths + 4 heights = 16 units
The entire frame is 96 cm in length, so
16 units = 96 cm
1 unit = 96 ÷ 16 = 6 cm
Length = 2 units = 6 cm x 2 =1 2 cm

Let's call the width of the box W cm
Hence the height is also W cm
Therefore, the length will be 2 x W = 2W cm
In the frame there are 4 lengths, 4 widths and 4 heights.
This is a total of 8W + 4W + 4W = 16 W which is 96 cm.
Hence, W = 96 ÷ 16 = 6 cm
Therefore, the length will be 6 cm x 2 = 12 cm

Answer: 12 cm

(4 marks)

39.

(a)

Figure Number	Number of shaded squares	Number of unshaded squares
1	1	8
2	4	12
3	9	16
4	**16**	**20**

The number of shaded squares is the square of the figure number.
Figure 1 = 1 x 1 = 1,
Figure 2 = 2 x 2 = 4,
Figure 3 = 3 x 3 = 9
So, the number of shaded squares for Figure 4 will be 4 x 4 = 16

The number of unshaded squares starts with 8 in Figure 1 and increases by 4 for each other figure.
Figure 2: 8 + 4 = 12
Figure 3: 12 + 4 = 16.
Figure 4 it will be 16 + 4 = 20

(b) Predict the number of **unshaded** squares in the 12^{th} figure, and explain your reasoning.

Since Figure 4 has 20 unshaded squares then in
Figure 5 there will be 20 + 4 = 24,
Figure 6 = 24 + 4 = 28,
Figure 7 = 28 + 4 = 32,
Figure 8 = 32 + 4 =36,
Figure 9 = 36 + 4 = 40,
Figure 10 = 40 + 4 = 44,
Figure 11 = 44 + 4 = 48 and
Figure 12 = 48 + 4 = 52

Alternatively,

There is a pattern for the number of unshaded squares.
This can be observed to be (Figure number +1) x 4
Hence the number of unshaded squares in Figure 12
= (12 + 1) x 4 = 52

OR
In any figure, the number of unshaded squares is equal to:
Total number of squares – Number of shaded squares
= (Figure No + 2)^2 – (Figure No)^2

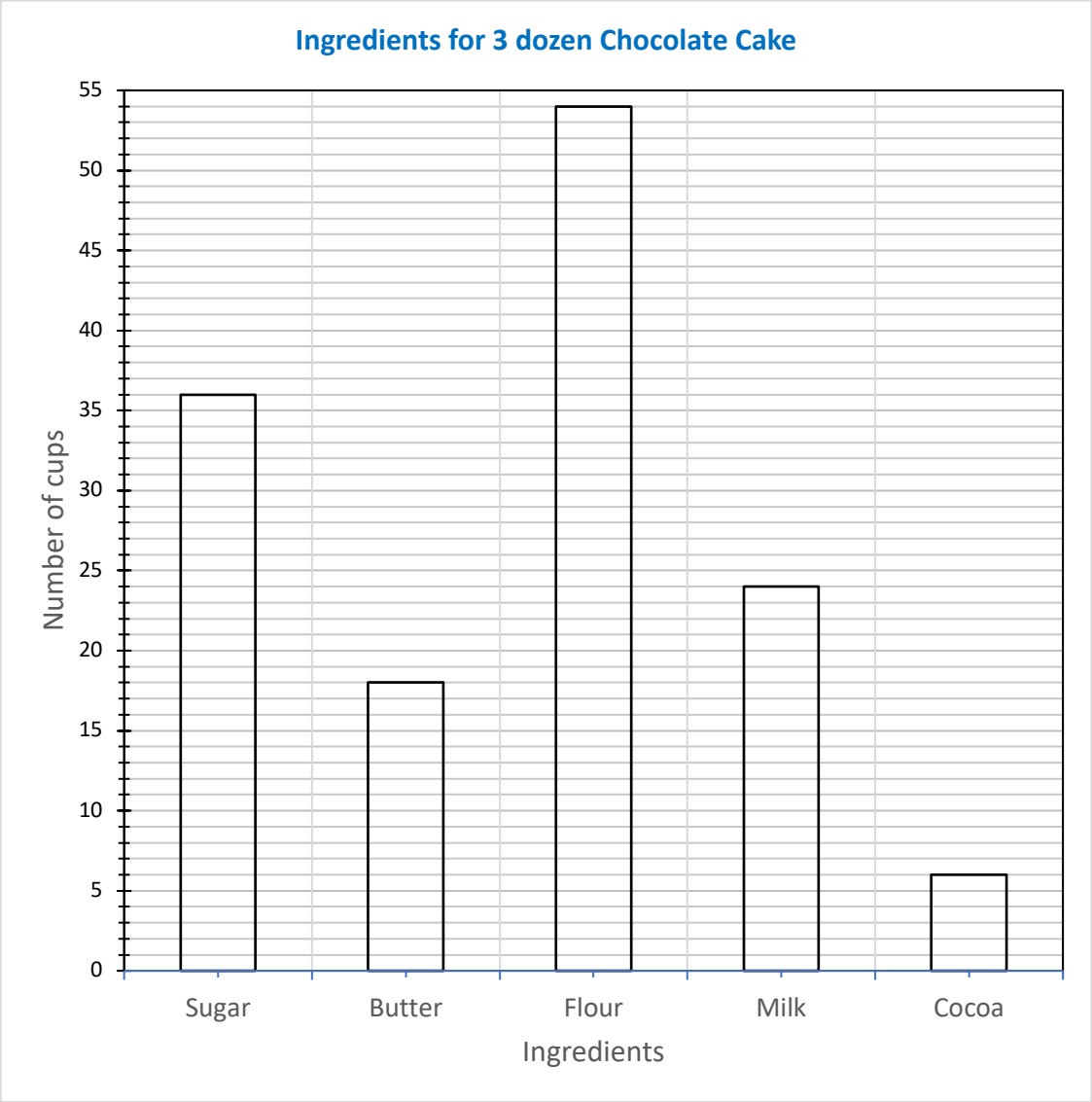
When Figure No = 12, the number of shaded squares
= (12 + 2)^2- (12)^2
= 196 - 144
= 52

Answer: 52

40. Ingredients for 3 dozen cakes:
3 dozen = 12 x 3 = 36 cakes, Amy will require

Sugar: 36 x 1 = 36 cups Butter: 36 x $\frac{1}{2}$ = 18 cups

Flour: 36 x 1 $\frac{1}{2}$ = 54 cups Milk: 36 x $\frac{2}{3}$ = 24 cups Cocoa: 36 x $\frac{1}{6}$ = 6 cups



(4 marks)

END OF TEST

FAS-PASS
Maths

PRACTICE TESTS FOR SEA MATHEMATICS

DETAILED SOLUTIONS

TEST BOOKLET 4

TEST CODE KA2504

AUTHORS

Dr SHEREEN A. KHAN & Dr FAYAD W. ALI

2025-2028 ASSESSMENT FRAMEWORK

SECTION 1 (20 marks)

1. We use the Place Value Chart to represent one hundred and nine thousand (109 000) thousand, nine hundred and one (901).

Thousands			Ones		
100 000	10 000	1 000	100	10	1
1	0	9	9	0	1

Answer: 109 901

2.

100 000	10 000	1 000	100	10	1
2	7	8	3	4	6

The underlined digit is in the 'ten thousands' position.
Hence its value = 7 x 10 000 = 70 000

Answer: 70 000 or Seventy thousand

3.

0.41 $>$ **0.14**

We use the expanded notation to compare the numbers.

$$0.41 = \frac{4}{10} + \frac{1}{100} = \frac{41}{100}$$

$$0.14 = \frac{1}{10} + \frac{4}{100} = \frac{14}{100}$$

$$\frac{41}{100} > \frac{14}{100}, \qquad \text{Hence, } 0.41 > 0.14$$

Answer: $>$

4.

Answer: 13.02

	T	O	t	h
7	9	$^{2}1$	1	4
	1	3	0	2

5. 40 % of 40 = $\frac{40}{100}$ x 40 = 16

Answer: 16

6. A composite number has at least one other factor besides one and itself.

It is NOT prime

31, 37 and 53 are prime.
27 = 3 x 3 x 3
49 = 7 x 7.

Answer: The composite numbers are 27 and 49

7. 821 – 254 = 567

	H	T	O
		11	
	7	~~1~~	11
	~~8~~	~~2~~	~~1~~
–	2	5	4
	5	6	7

Answer: 567

8. $14\frac{1}{2} - 3\frac{3}{4}$

$= 14\frac{2}{4} - 3\frac{3}{4}$

$= 13\frac{6}{4} - 3\frac{3}{4}$

$= 10\frac{3}{4}$

Answer: $10\frac{3}{4}$

$14\frac{2}{4} = 13 + 1 + \frac{2}{4}$

$= 13 + \frac{4}{4} + \frac{2}{4} = 13\frac{6}{4}$

9. 2 x 2 = 4, 4 x 3 = 12, 12 x 4 = 48

So, the next number in the sequence should be 48 x 5 = 240

Answer: 240

10. Number of pages read on day 1 = 10
Each day she reads 2 more pages than the previous day.
Hence, the number of pages on the other 7 days are
12, 14, 16, 18, 20, 22 and 24.
The total number of pages is 10 + 12 + 14 + 16+ 18 + 20 + 22 + 24 = 136

Answer: 136 pages

11. Length of the shorter pencil = 8 cm

Length of the longer pencil =17 cm
Difference in length = (17 – 8) cm = 9 cm
Answer 9 cm

12. Sam left home at 7:10 am

Arrival time at work = 7: 10 + 25 = 7: 35 am

He arrived 10 minutes before work started

Therefore, work would have started at 7: 35 + 10 = 7: 45 am

Answer: 7: 45 am

13. A marker is approximately 14 cm

14. Bella's mass is $54\frac{1}{4}$ kg = 54 kg 250 g
She is heavier than Arianna by 15 kg 400 g
Arianna's weight will be
$54\text{ kg }250\text{ g} - 15\text{ kg }400\text{ g}$

= 38 kg 850 g

Answer: 38.85 kg

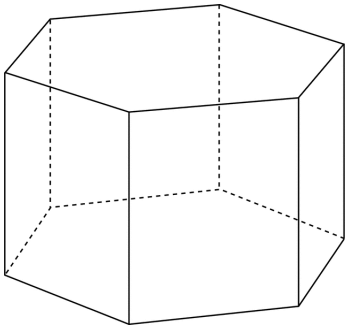
	Kg	g
	53	1250
	~~54~~	~~250~~
-	15	400
	38	850

15. From 12 noon to 2 pm there is 2 hours.

Every hour the minute hand through 4 quarter turns.
Hence from 12 noon to 2 pm the number of quarter turns made by the minute hand will be 4 x 2 = 8

Answer: 8

16.



There are 6 edges at the top, 6 edges at the base and 6 edges at the side of the hexagonal prism. The total will be 6 + 6 + 6 = 18

Answer: 18

17. A B H E

A and H have vertical lines of symmetry.

B and E have a horizontal line of symmetry but no vertical lines of symmetry.

Answer: B and E

18. The scores 7, 8 and 9 occurred once only.
The score of 15 occurred twice.
The score of 12 occurred 3 times.

Hence the modal score or mode is 12

Answer: 12

19. Number of items sold:

Number of hamburgers sold = 18
Number of hotdogs sold = 19
Number of French Fries sold = 11
Number of Aloo pies sold = 25
Number of Saheenas sold = 19
Total number of items sold = 18 + 19 +11 + 25 + 19 = 92

Answer: 92

20. Mean score = 81
Total score = Mean x number of subjects = 81 x 7 = 567

Answer: 567

SECTION 2 (39 marks)

21. 0.25 x 320 = 80

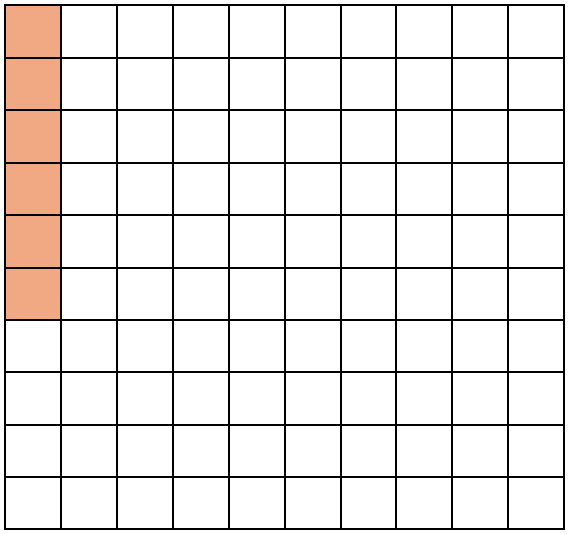
80 = 64 + 16

Hence 64 is the value of ☐

Answer: 64

(2 marks)

22.



$$\frac{2}{10} \times \frac{3}{10} = \frac{6}{100}$$

The grid consists of 100 squares. So, we can shade any 6 of the squares.

(2 marks)

23. We need to find out how many groups of 43 are there in 1200.
So, we divide 1200 by 43

	Th	H	T	O	
			2	7	
43	1	2	0	0	
		8	6	0	43×20
		3	4	0	
		3	0	1	43×7
			3	9	

So, 43 can be taken from 1200 a total of 27 times and after the 27th time there will be a remainder of 39.

Alternatively,
We can subtract 43 repeatedly from 1200

	1200	
43x10=430	-430	10 times
	770	
43x10=430	-430	10 times
	340	
43x5=221	-215	5 times
	125	
43x2=172	- 86	2 times
	39	27 times

Number of times 43 was subtracted = 27 times. Remainder = 39
Answer: 27 times with a remainder39

(2 marks)

24. One set of 5c + 10c + 25c + 50c = 90c
$18 = 1 800c
Number of groups of 90c in 1 800c
= 1 800 ÷ 90 = 20
Hence in $18.00 there will be 20 of each set of coins
Answer: 20

(2 marks)

25. For every pen that Majorie buys at $16.40, she buys twice the number of pencils at $2.80 each.
Marjorie must spend $66 in sets of (1 pen and 2 pencils)
The cost of 1 pen and 2 pencils = $16.40 + 2 ($2.80) = $22.00
Number of sets she can buy= $66.00 ÷ $22.00 = 3
This means that Majorie bought 3 sets of '1 pen and 2 pencils' which is 3 pens and 3 x 2 = 6 pencils in total.

Answer: 3 pens.

(3 marks)

26. 6 friends got 14 marbles with 4 remaining.

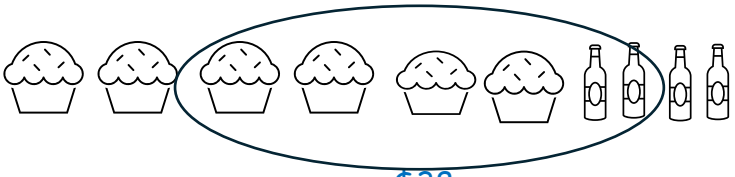
Therefore, the number of marbles in the bag = (14 x 6) + 4 = 84 + 4 = 88
For each to get 18 marbles the number must be 18 x 6 = 108
The number of marbles that must be added to the bag = 108 – 88 = 20

Answer: 20 marbles

(3 marks)

27. 4 cupcakes + 2 drinks cost $38

We can remove $38 worth of items from the second row



$38

$60

This means that the remaining:
2 cupcakes + 2 drinks will cost ($60 – $38) = $22
1 cupcake + 1 drink will cost $22 ÷ 2 = $11

Alternatively,

6 cupcakes + 4 drinks cost $60
4 cupcakes + 2 drinks cost $38
Subtracting we get
2 drinks + 2 cakes cost $60 - $38 = $22
Dividing by 2 we get
1 drink + 1 cake will cost $22 ÷ 2 = $11

Answer: $11

(3 marks)

28.

$\frac{1}{4}$ of Taj's mangoes = 72 x $\frac{1}{4}$ = 18
Remainder = 72 – 18 = 54

$\frac{1}{2}$ of Zeke's mangoes = 102 x $\frac{1}{2}$ = 51

Remainder = 102 – 51 = 51

Therefore, the number of mangoes remaining = 54 + 51 = 105

Answer: 105

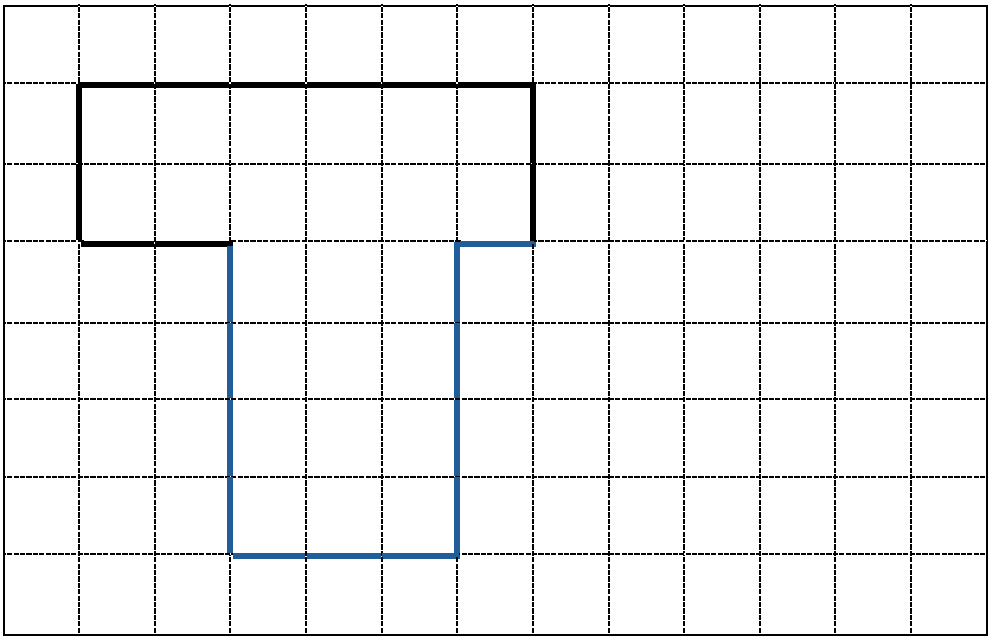
(3 marks)

29. Area of square = $3\frac{1}{2}$ x $3\frac{1}{2}$ = $12\frac{1}{4}$ cm^2
Area of rectangle = 3 x 4 = 12 cm^2
Difference in area = $12\frac{1}{4}$ - 12 = $\frac{1}{4}$ or 0.25 cm^2
Answer: $\frac{1}{4}$ or 0.25 cm^2

$3\frac{1}{2} \times 3\frac{1}{2} = \frac{7}{2} \times \frac{7}{2} = \frac{49}{4} = 12\frac{1}{4}$

(2 marks)

30. Sample solution



(2 marks)

31. Time taken for the job = 4 hours and 20 minutes = $4\frac{1}{3}$ h

Charge for the job only = \$150 x $4\frac{1}{3}$ = \$650

Cost to the customer

= Charge for the job + Cost of materials

= \$650 + \$428.25 = \$1 078.25

$150 \times 4\frac{1}{3} = 150 \times \frac{13}{3}$

$= 50 \times 13 = 650$

Answer: \$1 078.25

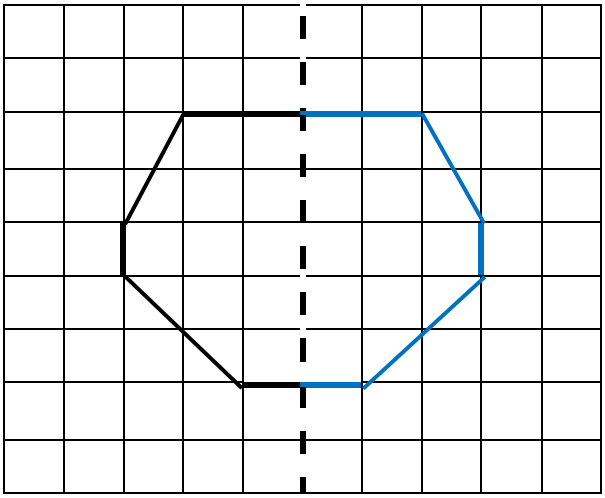
(3 marks)

32. Number of cubes that make the solid = 9 + 5 + 1 = 15
Volume of 1 cube = 2 x 2 x 2 = 8 cm^3
Hence, volume of the solid = 8 cm^3 x 15 = 120 cm^3

Answer: 120 cm^3

(3 marks)

33.



(2 marks)

34.

Property	**Shape**
One angle greater than a right angle	R
One pair of parallel sides	Q

Figures P and Q have two angles greater than right angles. Only R has one angle greater than a right angle.

Figure P has 2 pairs of parallel sides and R has no parallel sides. Only Q has one pair of parallel sides.

35.

Note	Number of notes	Value of notes
$1	15	$1 x 15 = $15
$5	23	$5 x 23 = $115
$10	40	$10 x 40 = $400
$20	12	$20 x 12 = $240

Total = $ (15 + 115 + 400 + 240) = $ 770

Answer: $770

(2 marks)

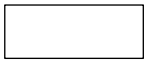
36.

Type of card	Frequency
	7
	6
	4
	4

(3 marks)

SECTION 3 (16 marks)

37. We represent the cost of the three items using a bar model.

Pineapple 

Watermelon 

Apple 

Total cost of three items = $44

Five and one-half units cost = $44 $5\frac{1}{2} = \frac{11}{2} = 11$ halves

11 halves = $44

1 half of a unit = $44 ÷ 11 = $4

1 whole unit = $4 x 2 = $8

Pineapple = $8. Watermelon = $8 x 4 = $32. Apple = $4

One water melon + 2 pineapples and 3 apples will cost a total of
= $32 + 2($8) + 3($4) = $32 + $16 + $12 = $60

Alternatively

We consider the price of 1 watermelon as 4 pineapples and the price of an apple as $\frac{1}{2}$ pineapple.

So, the cost of 4 pineapples + 1 pineapple + $\frac{1}{2}$ pineapple = $44

5 $\frac{1}{2}$ pineapples cost $44

1 pineapple will cost $44 ÷ 5 $\frac{1}{2}$ = $ 8

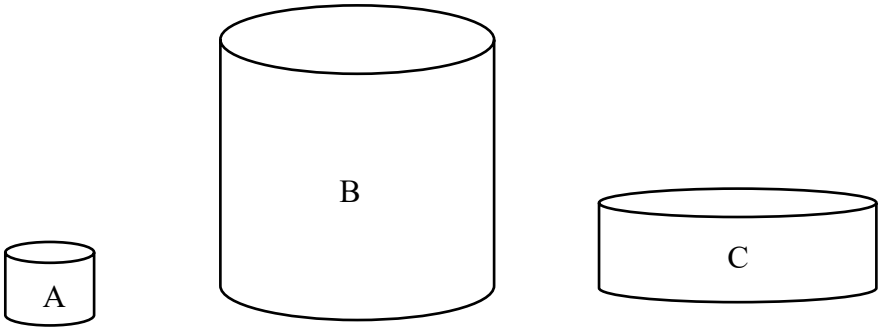
Hence 1 watermelon costs $ 8 x 4 = $32 and one apple costs $\frac{1}{2}$ ($8) = $4

One water melon + 2 pineapples and 3 apples will cost a total of
$32 + 2 x $8) + 3 x $4 = $ (32 + 16 + 12) = $ 60

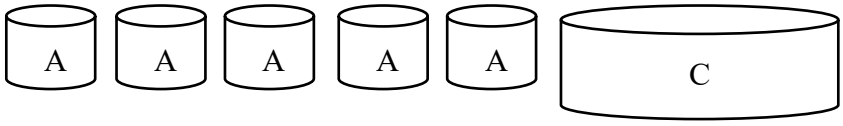
Answer: $ 60

(4 marks)

38.



When water from all the filled containers shown below is poured into Can B, it is three-quarters full.



What is the capacity of Can B in litres?

12 cans A = 1 Can B

1 can A = $\frac{1}{12}$ B

5 of A + 1 of C fills $\frac{3}{4}$ can B

Therefore: $\frac{3}{4}$ B = 5 x $\frac{1}{12}$ B + 400 mls

$\frac{3}{4}$ B = $\frac{5}{12}$ B + 400 =

($\frac{3}{4}$ - $\frac{5}{12}$) of B = 400 m

$\frac{1}{3}$ of can B = 400 mls

Can B will hold = 400 x 3 = 1 200 or 1.2 litres

Answer 1.2 litres

Alternatively, we can draw a diagram

12 of can A can fill can B, so we represent can B as having a capacity of 12 of can A

A	A	A	A
A	A	A	A
A	A	A	A

When water from 5 filled containers of A and all of can C is poured into Can B, it is three-quarters full. Shade three quarters of 12 parts will - 9 parts. Of the 9 parts, shade 5 parts to represent the 5 filled containers. The remaining 4 parts is equal to the capacity of C.

A	A	A	A
A	A	A	A
A	A	A	A

Since C has a capacity of 400 ml.
So, 4 x capacity of A = 400 ml
Capacity of A = $400 \div 4 = 100\ ml$

Capacity of B = 12 x 100 = 1200 ml = 1.2 litres

Answer: 1.2 litres

(4 marks)

39.

a)

Figure Number	Number of beads
1	1
2	3
3	5
4	7

The number of beads increase by 2 for every figure.

Figure 5 will have 7 + 2 = 9 beads,
Figure 6 will have 9 + 2 = 11 beds,
Figure 7 will have 11 + 2 = 13 beads and
Figure 8 will have 13 + 2 = 15 beads.

Answer: 15

b) We note that number of beads is always an odd number
Also, if we add 1 to the number of beads and divide the result by 2, we obtain the Figure Number.
For example,
For 5 beads, 5+1= 6, Figure Number = 6 ÷ 2 = 3
For 7 beads, 7+1= 8, Figure Number = 8 ÷ 2 = 4
For 33 beads, 33+1 =34, Figure Number = 34 ÷ 2 = 17

Number of beads	Figure Number
1	1
3	2
5	3
7	4
15	8
33	17

Answer: Figure 17

c) By observation the number of beads is always an odd number and 36 is NOT an odd number

OR we can use the pattern stated in part (b)

36+1= = 37, so the Figure number will be 37 ÷ 2 = $18\frac{1}{2}$ and the Figure number cannot be a fractional number.

So, no figure will have 36 beads.

(4 marks)

40.

a) The mean population of the four towns.

Mean population = sum of the population of each of the four towns ÷ 4

(85 000 + 50 000 + 65 000 + 70 000) ÷ 4

= 270 000 ÷ 4

= 67 500

b) Explanation

Number of persons who migrated from Town D to Town C

= 10% of 70 000 = 7 000

The migration of 7 000 from D to C simply means that D decreases by a total of 7 000 while C increases by 7 000.

Hence, the total population of the people in the four towns remains the same. Also, the number of towns remain the same. Therefore, the mean will remain the same 67 500 ÷ 4 = 67 500.

(4 marks)

END OF TEST

FAS-PASS
Maths

PRACTICE TESTS FOR SEA MATHEMATICS

DETAILED SOLUTIONS

TEST BOOKLET 5

TEST CODE KA2505

AUTHORS

Dr SHEREEN A. KHAN & Dr FAYAD W. ALI

2025-2028 ASSESSMENT FRAMEWORK

SECTION 1 (20 marks)

1. We use the Place Value Chart to represent 308 603

Thousands			Ones		
100 000	10 000	1 000	100	10	1
3	0	8	6	0	3

Answer:

Three hundred and eight thousand, six hundred and three.

2. The numeral in the 'thousand' position is 0. It will be unchanged if we round down or increased by one if we round up. Our decision depends on the value of the digit to the immediate right of the thousands digit.

This digit is 7 and is the deciding digit. Since 7 is more than 5, we round up and the thousand digit is increased by one. All digits after the thousand are now replaced by zeros to maintain the place value of the number.

The result, to the nearest thousands will now be 51 000

Answer 51 000

3. Number of visitors on Tuesday = 1 657 + 423 = 2 080

Answer: 2 080

4.

$$\frac{25}{35} = \frac{\boxed{5}}{7}$$

We divide both the numerator and the denominator by 5 to get $\frac{5}{7}$

5. $0.2 = \frac{2}{10}$

$\frac{2}{10} = \frac{20}{100} = 20\%$

OR we simply multiply 0.2 x 100 to get 20 %

Answer: 20%

6. Number of crates

110 ÷ 6 = 18 and remainder 2

So, 18 crates can be filled.

Answer: 18

	H	T	O	
6	1	$^{1}1$	$^{5}0$	
		1	8	R 2

7. $12.34 = 1 \times 10 + 2 \times 1 + 3 \times \frac{1}{10} + 4 \times \frac{4}{100}$

So, $\frac{4}{100}$ is the number to be placed in the box

Answer: $\frac{4}{100}$

8. The fraction of almonds remaining = $1 - \frac{4}{5} = \frac{1}{5}$

Hence $\frac{1}{5}$ of the almonds from the filled pack = 27

Number of almonds in the filled pack = 27 x 5 = 135

Answer: 135

9.

Th	H	T	O
4	2	1	5
4	1	2	5
4	2	5	1
4	1	1	5

Since all the thousand digits are the same, we start comparing the hundred digits.

The two smaller numbers are 4 115 and 4 125. When their tens digits are compared, 4 115 < 4 125. So, in ascending order, the numbers will be 4115, 4 125

The two larger numbers are 4 215 and 4 251. When their tens digits are compared, 4 215 < 4 251. So, in ascending order, the numbers will be 4215, 4 251

Answer: 4115, 4 125, 4 215 and 4 251

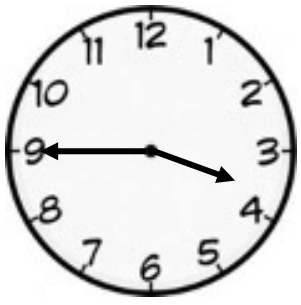
10. Cost of all 3 books: $57.50 + $ 89.95 + $157.00 = $304.45

The remainder from $500.00 will be: $500.00 - $304.45 = $195.55

Answer: $195.55

11. The best suggested approximation is 9 g

12. A quarter to four



13. 1 m = 1 x 100 cm = 100 cm

3 mm = 3 x $\frac{1}{10}$ = 0.3 cm

Length of wire in cm = (100 + 63 + 0.3) cm = 163.3 cm

Answer: 163.3 cm

14. Capacity = 12 x 6 x 20 cm^3 = 1 440 cm^3

$$= \frac{1440}{1000} \text{ litres}$$

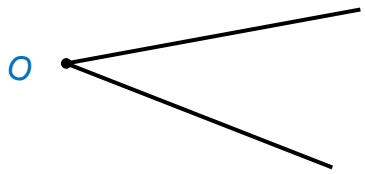
=1.44 litres

Answer: 1.44 litres

15. There can be many similar angles that can be drawn that are less than a right angle.

The name of this angle is acute.

Answer:



16. In both triangles A and C, there are two equal sides which make them isosceles. In triangle B, all three sides are unequal and so triangle B is scalene.

Answer: B

17. The cross-section of the ball and the pyramid are non-uniform. In the case of the ball, they will be circles of varying sizes and in the case of the pyramid, they will be squares of varying sides.

In the cylinder the cross section will be a circle of a fixed size. So, the cylinder is the only solid shown with a uniform cross-section.

Answer: Cylinder

18. The modal score is the score that occurs the most. Packs of 25 jelly beans were counted 15 times while the other packs were counted 10, 12 and 13 times. Since 15 is the highest frequency, the mode is 25.

Answer: 25

19. The mean number of minutes per day = (Total time) ÷ number of days

= (14 + 17 + 16 + 15 + 13) ÷ 5

= 75 ÷ 5 = 15 minutes

Answer: 15 minutes

20. The total number of balls = 12 and which represents 60 persons.

Hence 1 ball represents 60 ÷ 12 = 5

Answer: 1 ball represents 5 persons

SECTION 2 (39 marks)

21. Cost of parking

Roshni will use $20.00 x 2 = $40.00
$10.00 x 1 = $10.00
$1.00 x 3 = $ 3.00
25c x 1 = $ 0.25
5c x 2 = $ 0.10
1c x 4 = $ 0.04

Total = $ 53.39

(2 marks)

22. After receiving 423 cards and giving Celcita 350 Alonzo will now have 423 – 350 = 73 more cards than he had originally.

If Alonzo now has 352, then, at the start, he would have had 352 – 73 = 279

Alternatively,
Represent the number of cards Alonzo as ☐

☐ + 423 – 350 = 352

☐ + 73 = 352

☐ = 352 – 73
= 279

Answer: 279 cards

(2 marks)

23. After Garfield mows $\frac{1}{3}$ of the lawn, the fraction that remains to be mowed is

$$1 - \frac{1}{3} = \frac{2}{3}$$

Therefore, each of the three friends will mow

$$\frac{2}{3} \div 3 = \frac{2}{3} \times \frac{1}{3} = \frac{2}{9}$$

Answer: $\frac{2}{9}$

(2 marks)

24. Number of lettuces to be planted = 6 x 12 = 72

Cost of the lettuces = \$2 x 72 = \$144

Hence, money left after buying the lettuces = \$200 - \$144 = \$56

Answer: \$56 **(2 marks)**

25. Compare Box A with Box B

In Box A, 800g costs \$16.80 So 100g will cost \$16.80 ÷ 8 = \$2.10	In Box B, 250g costs \$5.50 So 50g will cost \$5.50 ÷ 5 = \$1.10 And 100g will cost \$1.10 x 2 = \$2.20
\$2.10 < 2.20, so the cereal is cheaper in Box A	

OR

Price per gram of the cereal in Box A = \$16.80 ÷ 800 = \$0.021
Price per gram of the cereal in Box B = \$5.50 ÷ 250 = \$0.022

0.021 < 0.022

So, the cereal is cheaper in box A

Answer: Box A

(3 marks)

26. We are given that

4 stars + 3 pentagons = 26
3 stars + 4 pentagons = 23

Add both sets — 7 stars + 7 pentagons = 26 + 23 = 49
7 stars + 7 pentagons = 49

Divide by 7 — 1 star + 1 pentagon = 7

Multiply by 5, — 5 stars + 5 pentagons = 7 x 5 = 35
5 stars + 5 pentagons = 35

Answer: 35

(3 marks)

27. Answer $76 \times 23 = (70 \times 20) + (6 \times 20) + (70 \times 3) + (6 \times 3)$

(3 marks)

28.

Andrew [ ]

Bruce [ ][ ] Andrew's share x 2

Conrad [ ][12] Andrew's share + $12

Adding all the shares for Andrew + Bruce + Conrad

4 x [ ] + 12 = 120

4 x [ ] = $120 – $12 = $108

[ ] = $108 ÷ 4 = $27

Andrew's share = $27

Conrad's share = $27 + $12 = $39

Answer: $39

(3 marks)

29. The weight of the two grapefruits = (3.5 – 2.3) kg = 1.2 kg
Therefore, the weight of 1 grapefruit = 1.2 ÷ 2 = 0.6 kg
= 0.6 x 1000 = 600 g

Answer: 600 g

(2 marks)

30. The weight of 3.2 kg is 4 times the weight of 0.8 kg

The number of oranges that would weigh 3.2 kg = 3 x 4 = 12
So, the number of additional oranges required to weigh 3.2 kg = 12 - 3 = 9

Answer: 9 oranges

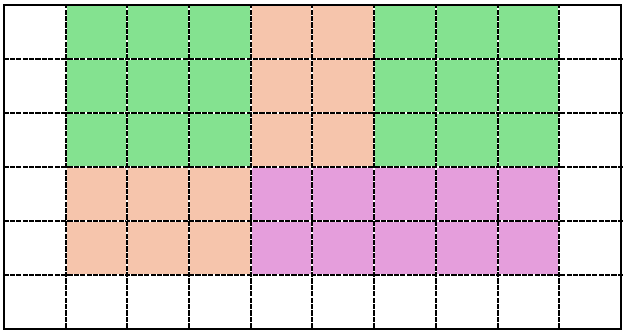
(2 marks)

31. Several options are possible, some are shown below

Length (cm)	Breadth (cm)	Height (cm)
4	3	3
6	3	2
9	2	2

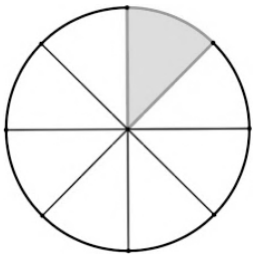
(3 marks)

32. One possible solution for the 8 by 5 rectangle.



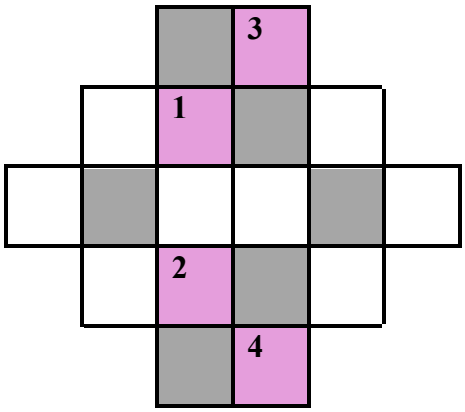
(3 marks)

33. The shaded unit moves to the next position every (32÷ 8) = 4 minutes. In 40 minutes = 32 + 8 minutes, the circle will rotate an additional 8 ÷ 4 = 2 units clockwise from its original to the position shown in the diagram below.



(2 marks)

34. The four squares are shaded and numbered 1,2,3 and 4



(2 marks)

35. The completed tally chart is shown below.

Size of T-shirt	Number in stock	Number left
Small	𝍸 𝍸 ||	𝍸 |||
Medium	𝍸 ||	||||
Large	𝍸 𝍸 ||||	𝍸 |

Number of small left = Number in stock – number sold = 12 – 4 = 8
Number of medium left = Number in stock – number sold = 7 – 3 = 4
Number of large left = Number in stock – number sold = 14 – 8 = 6

(2 marks)

36. Amount collected in 2021 and 2022 = \$100 x (52 + 53) = \$10 500
Amount collected in 2023 and 2024 = \$120 x (60 + 60) = \$14 400
Total collected = \$ 10 500 + \$14 400 = 24 900

Answer: \$ 24 900

(3 marks)

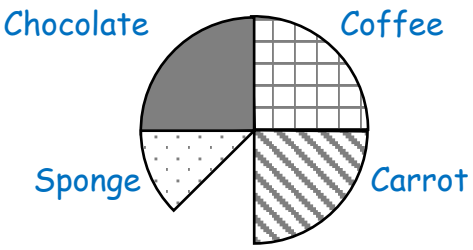
SECTION 3 (16 marks)

37. After keeping one-half of the sponge cake the remainder is $\frac{1}{2}$.

Each friend gets $\frac{1}{2} \div 4 = \frac{1}{2} \times \frac{1}{4} = \frac{1}{8}$ of the sponge cake.

Each of the other cakes is divided by 4 so each friend $\frac{1}{4}$ of each cake.

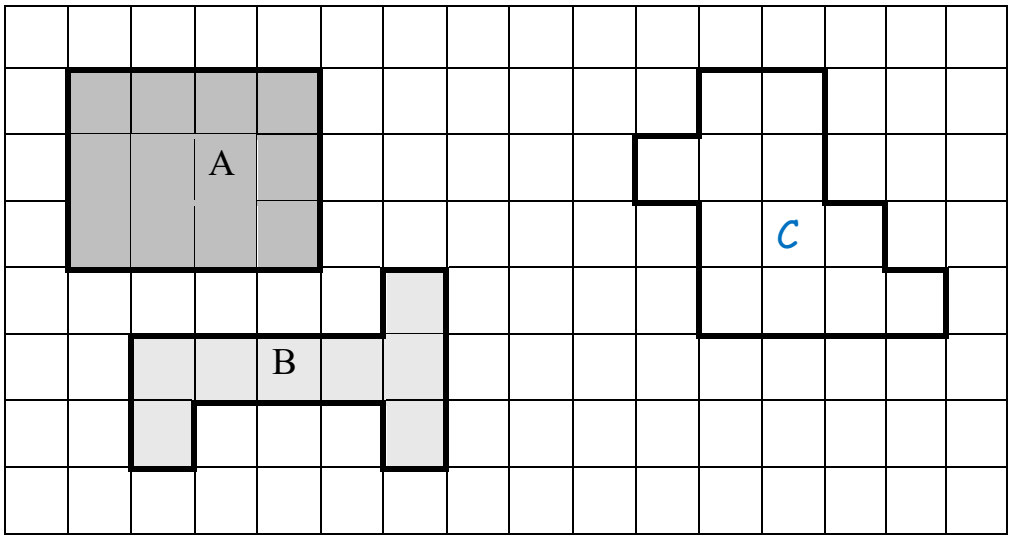
This amounts to $(3 \times \frac{1}{4}) + \frac{1}{8} = \frac{3}{4} + \frac{1}{8} = \frac{7}{8}$ of a cake for each friend.



Each friend gets seven eighths of a cake.

(4 marks)

38. One possible answer.



Area of shape A = 12 square units

Perimeter of shape B = 18 units

The shape C has an area of 12 units and a perimeter of 18 units.

(4 marks)

39.

Any of these properties can be stated

Same	Different
3. Two right angles	1. Shapes differ in size.
4. Two obtuse angles	2. Shapes differ in orientation – apex points east, west, north or south
5. One line of symmetry	
6. One acute angle	
7. Irregular polygons	

(4 marks)

40.

a) How many seedlings were lost from Tuesday to Friday.

On Tuesday there were 42 surviving seedlings and on Friday there were 30. So, the number lost between Tuesday and Friday = 42 – 30 = 12.

OR (42–36) =6, (36–32) =4, (30–2)=2, Total lost = 6+4+2=12

Answer: 12

b) The trend indicates that the loss in the number of seedlings decreases as the week progresses from Monday to Friday by 10 then 8 then 6 then 4 and then 2.

Each day has two less than the previous one. If this trend continues, on Saturday the number of seedlings can be the same (30) or at most one less than Friday (29). So 29-30 should have survived by Saturday.

(4 marks)

END OF TEST

FAS-PASS
Maths

PRACTICE TESTS FOR SEA MATHEMATICS

DETAILED SOLUTIONS

TEST BOOKLET 6

TEST CODE KA2506

AUTHORS

Dr SHEREEN A. KHAN & Dr FAYAD W. ALI

2025-2028 ASSESSMENT FRAMEWORK

SECTION 1 (20 marks)

1. The first two blocks represent thousands: 2 x 1 000 = 2 000
The next six blocks represent hundreds: 6 x 100 = 600
The next seven blocks represent tens: 7 x 10 = 70
The last three blocks represent ones: 3 x 1 = 3
This gives a total of 2 673

Answer: 2 673

2. The circled numbers are best described as square numbers because

$1^2 = 1$, $2^2 = 4$, $3^2 = 9$ and $4^2 = 16$.

Answer: Square numbers

3. 2 098 + ☐ = 3417

☐ = 3 417 - 2 098 = 1 319

Answer: 1 319

4. $0.13 = \frac{1}{10} + \frac{3}{100} = \frac{13}{100}$

Answer: $\frac{13}{100}$

5. To compare the numbers, we list the numbers on a Place value Chart.

Ones	Tenths	Hundredths
0	7	0
1	0	5
0	3	6
0	0	8

The only number that has a 'ones' digit is 1.05. Hence 1.05 is the largest.
Next, we look at the 'tenths' digits in the three remaining numbers. The largest is 7, then 3, then 0. So, 0.70 > 0.36 > 0.08
In descending order, we now have 1.05, 0.70, 0.36, 0.08

Answer: 1.05, 0.70, 0.36, 0.08

6. First, express $5\frac{1}{3}$ as an improper fraction, $\frac{16}{3}$

So, $\frac{3}{5}$ by $5\frac{1}{3}$. = $\frac{3}{5} \times \frac{16}{3} = \frac{16}{5}$

Answer: $\frac{16}{5}$ or $3\frac{1}{5}$

7. Each number is obtained from the previous number by dividing it by 2

So, the missing number is 16 ÷ 2 = 8

Answer: 8

8. Number of chairs = Number of rows x number of chairs per row

= 62 x 480 = 29 760

Answer: 29 760

9.

Tens	Ones
7	4
2	6

OR

Tens	Ones
7	6
2	4

74 + 26 = 100 OR 76 + 24 = 100

10. 50c x 1 = 0.50
25c x 3 = 0.75
10c x 4 = 0.40
Total = $1.65
The difference form $2.00 = $2.00 - $1.65 = $0.35
Number of 5c in 35c = 35÷ 5 = 7

Answer: 7

11. Answer: C- The width of a finger

12. 1.25 kg = 1.25 x 1 000 = 1 250 g

Mass of the pineapple + Mass of the piece of pineapple = 1 250 g
950 + Mass of the piece of pineapple = 1 250
Mass of the piece of pineapple = (1 250 – 950) g
= 300 g

Answer: 300 g

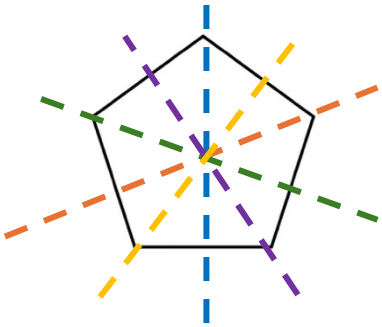
13. The figure is composed of 10 whole squares and 4 triangles.
Each square = 1 cm^2 and each triangle = $\frac{1}{2}$ cm^2
Total area of the figure = (10 x 1) + (4 x $\frac{1}{2}$) = 12 cm^2

Answer: 12 cm^2

14. The container holds 4.25 x 1 000 = 4 250 mls
Therefore, the number of bottles that can be filled = 4 250 ÷ 50 = 85

Answer: 85

15.



Answer: 5

16. The pattern starts with a plane, then two balls and then a plane again, before it repeats itself.

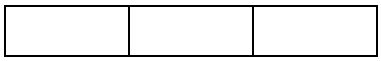
If we name the plane A and the ball B then this would be ABBA and placing two repeats together this will give ABBA followed by ABBA which is ABBAABBA which is III

Answer: III

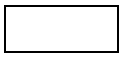
17. Answer: II The lines DE and EF are perpendicular to each other

18. The total of the two numbers = 18 x 2 = 36

The larger number = 3 x smaller number



4 x smaller number = 36



Smaller number = 36 ÷ 4 = 9

Larger number = 9 x 3 = 27

Answer: 27

19. In the sentence the letter P occurs 9 times.

Answer: 9

20. Number who chose nuts = 12

Number who chose biscuits = 10
Number who chose fruits = 13
Number who chose cake = 5

Total = 12 + 10 +13 + 5 = 40
So, the number who did not take part = 50 – 40 = 10

Answer: 10

SECTION 2 (39 marks)

21. For comparison, we bring all to the same measure. This could be percent or decimal or fraction. We choose percent.

$0.05 = 0.05 \times 100\% = 5\ \%$

$\frac{5}{10} = \frac{5}{10} \times 100\% = 50\ \%$

$5\% < 20\% < 50\%$

So, $0.05 < 20\% < \frac{5}{10}$

Answer: $0.05, 20\%, \frac{5}{10}$

(2 marks)

22. The large square consists of 16 smaller squares of which 4 are already shaded.

$\frac{3}{8}$ of 16 = 6

So, for $\frac{3}{8}$ of the figure to be shaded we need to shade 6 – 4 = 2 more squares.

Answer: 2

(2 marks)

23. $\frac{11}{24} = \frac{8}{24} + \frac{3}{24} = \frac{1}{3} + \frac{1}{8}$

Answer: $\frac{1}{3} + \frac{1}{8}$

(2 marks)

24. VAT = 18 % of $2 450 = $\frac{18}{100}$ x $2 450 = $441
So, price after VAT = Marked price + VAT = $ 2450 + $ 441 = $2 891

OR

We can consider the marked price as 100% and add the 18 % VAT to get 118%
Then, we find 118 % of $2 450 = $\frac{118}{100}$ x $2 450 = $2 891

Answer: $2 891

(2 marks)

25. Cost of 3 pizzas at $70 each = $70 x 3 = $210
Cost of 2 cakes at $45 each = $45 x 2 = $90
Cost of 12 bottles of soda at $5 each = $5 x 12 = $60

Total cost = $210 + $90 + $60 = $ 360
The total number of people at the party = 8 + 1 = 9
Each person will pay $360 ÷ 9 = $40

Answer: $40

(3 marks)

26. The cost of $\frac{1}{2}$ kg of brand B is $4.45

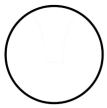
5 $\frac{1}{2}$ kg = 11 x $\frac{1}{2}$ kg
So, the cost of $\frac{1}{2}$ kg of brand A is $49.50 ÷ 11 = $4.50
$4.45 < $4.50

Answer: Package B

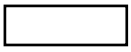
(3 marks)

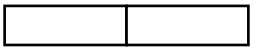
27. 5 quarter circles have a value of 20

1 quarter circle will have a value of 20 ÷ 5 = 4. One circle = 4x4=16
Therefore 16 + 2 stars = 40
2 stars = 40 – 16 = 24 and 1 star = 24 ÷ 2 = 12

Answer:  = 16 and  = 12

(3 marks)

28. 3rd Place 

2nd Place 

Winner 

The second-place winner received half the prize money as the winner. Hence, the winner will get 4 parts.
This is a total of 7 parts.
Hence the fraction of the prize money received by the third placed = $\frac{1}{7}$

Answer: $\frac{1}{7}$

(3 marks)

29.

Distance between the white car and the red car
= 11 km 400 m + 4 km 800 m = 15 km 1200 m = 16 km 200 m

1 000 m = 1 km. So, the distance between the white and red cars = 16.2 km

Answer: 16.2 km

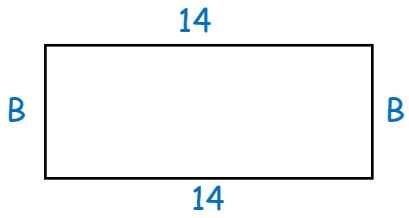
(2 marks)

30.Perimeter of the square = 12 x 4 = 48 cm

Therefore, perimeter of the rectangle = 48 cm
Length of rectangle = 14 cm

B + B + 14 + 14 = 48
B + B = 48 – 14 – 14 = 20

Breadth = 20 ÷ 2 = 10 cm



Answer: 10 cm

(2 marks)

31. Area of P = 9 cm^2 Area of Q = = 8 cm^2 Area of R = 10 cm^2
8 < 9 < 10. So, area of Q < area of P < area of R

Answer: Q, P, R

(3 marks)

32.3 parts of milk + 2 parts of water makes 60 litres of mixture
Hence, 3 + 2 = 5 parts = 60 litres.
So, 1 part of mixture = 60 litres ÷ 5 = 12 litres

Therefore, in the 60 litres of mixture there are 3 x 12 = 36 litres of milk and 2 x 12 = 24 litres of water.

For the new mixture there must now be 2 parts of milk to 3 parts of water.

Since only water is being added, the 36 litres of milk will comprise 2 parts of the new mixture. So, 1 part will now be = 18 litres.

The number of litres for 3 parts of water = 18 x 3 = 54 in the new mixture.

Original mixture

12	12	12

12	12

Milk

18	18

Water

18	18	18

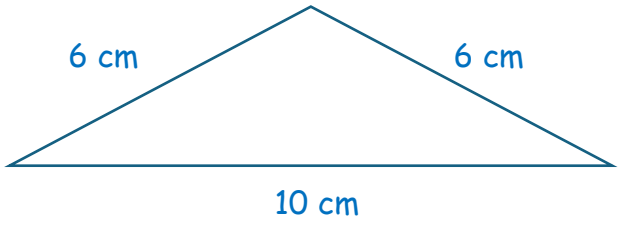
New Mixture has 2 parts milk = 36 l

There are already 24 litres of water in the original mixture.
So, we must now add 54 – 24 = 30 litres of water

Answer: 30 litres

(3 marks)

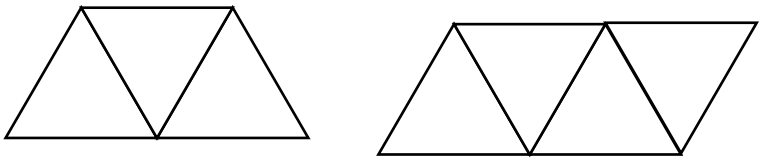
33.



Answer: The triangle is an isosceles triangle since exactly two sides are equal.

(2 marks)

34. Trapezium Parallelogram



(2 marks)

35. The five even numbers will be
18, 18 + 2 = 20, 20 + 2 = 22, 22 + 2 = 24 and 24 + 2 = 26
The mean of the five numbers = (18 + 20 + 22 + 24 + 26) ÷ 5
= 110 ÷ 5 = 22

Answer: 22

(2 marks)

36. Total number of students in the survey = 60 + 25 + 50 + 48 + 24 + 43 = 250

The two most popular colours are red and blue.

Number of students choosing red and blue = 60 + 50 = 110

Hence, the percentage who chose the two most popular colours

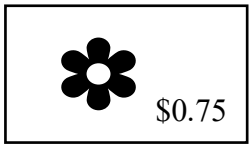
$= \frac{110}{250} \times 100\ \% = 44\ \%$

Answer: 44 %

(3 marks)

SECTION 3 (16 marks)

37.



3 stamps at $12.50 = $37.50

2 stamps at $5.00 = $10.00

4 stamps at $0.75 = $3.00

Total = $ 37.50 + $ 10.00 + $ 3.00 = $50.50

Answer: 3 @$12.50, 2@$5 and 4@$0.75

(4 marks)

38. The area of the shaded triangle = $\frac{1}{4}$ area of the square = $\frac{1}{4}$ (10 x 10) = 25 cm^2

The area of the 4 shaded rectangles = $\frac{4}{5}$ x area of the other square

= $\frac{4}{5}$ x 10 x 10 = 80 cm^2

Area of the shaded region = (25 + 80) = 105 cm^2

The area of the three unshaded triangles = $\frac{3}{4}$ area of the square = $\frac{3}{4}$ (10 x 10) = 75 cm^2

The area of the 1 unshaded rectangle = $\frac{1}{5}$ x area of the other square

= $\frac{1}{5}$ x 10 x 10 = 20 cm^2

Area of the unshaded region = (75 + 20) = 95 cm^2

OR

Area of entire region = 20x10 cm^2 = 200 cm^2

Area of unshaded region = (200 – 105) cm^2 = 95 cm^2

Difference between the unshaded region and the shaded region = (105 -95) = 10 cm^2

Answer: 10 cm^2

(4 marks)

39.

Number of faces	Number of vertices	Number of edges
14	24	36

Faces: Each corner has an additional face, and since there are 8 corners, there will be 8 additional faces. Number of faces = 6+8 = 14

Vertices: There are 8 vertices (corners) in a cube and each vertex has been cut off to from 3 new vertices. This gives a total of 3x8 = 24 vertices

Edges: Each corner now has 3 additional edges and since there are 8 corners the additional edges are 3x8=24. The total number of edges = 24+12 = 36

(4 marks)

40. For easy calculation, we take 1 block as equivalent to 1 run. The result would be the same if we chose 1 block to represent any other number of runs, say 1 block = 2 runs or 1 block = 10 runs etc.

Scores are: Anil -13, Rio -10, Kai -16, Don -15 and Esa-21

Total = 13 + 10 + 16 + 15 + 21 = 72

Mean = Total score ÷ number of batsmen = 75 ÷ 5 = 15

Don's score was 15

Hence, Don's score was the same as the mean score

OR

If all the scores were evenly distributed then each one would be the same as Don's score. Kai and Esa are 6 + 1 =7 units above Don's while Anil and Rio are 2+5 = 7 units below Don's score.

Answer: Don

(4 marks)

END OF TEST

FAS-PASS
Maths

PRACTICE TESTS FOR SEA MATHEMATICS

DETAILED SOLUTIONS

TEST BOOKLET 7

TEST CODE KA2507

AUTHORS

Dr SHEREEN A. KHAN & Dr FAYAD W. ALI

2025-2028 ASSESSMENT FRAMEWORK

SECTION 1 (20 marks)

1.

Thousands			Ones		
100 000	10 000	1 000	100	10	1
4	0	7	2	3	0

The Place value chart shows
Four hundred and seven thousands, two hundred and thirty ones.
This is written as four hundred and seven thousand, two hundred and thirty.

Answer: Four hundred and seven thousand, two hundred and thirty.

2.

	10 000	1000	100	10	1
Gerard	3	4	0	7	5
Sachin	5	0	0	1	8
Julio	1	9	8	6	4

Comparing the first digit of each number, we note that 5 > 3 > 1.
Hence, 50 018 > 34 075 > 19 864

Answer: Sachin, Gerard, Julio

3. The whole is made up of 100 blocks

So, each row of 10 blocks represents one tenth = 0.1
Three such rows represent three-tenths = 3 x 0.1 = 0.3
Each small cube represents one hundredth = 0.01
Two small cubes will represent two hundredths = 2 x 0.01 = 0.02
Hence the blocks represent 0.3 + 0.02 = 0.32

Answer: 0.32

4. Number of stars = 20 Number of shaded stars = 7

Hence fraction shown shaded = $\frac{Number\ of\ shaded\ stars}{Number\ of\ stars} = \frac{7}{20}$

Answer: $\frac{7}{20}$

5. Saturday's spectators total 20 650

Sunday's spectators total 15 675

Difference = 20 650 – 15 675 = 4 975

So, there were 4 975 more spectators on Saturday

Answer: 4 975

	Th	H	T	O
	9	15	14	
1	~~10~~	~~5~~	~~4~~	10
~~2~~	~~0~~	~~6~~	~~5~~	~~0~~
– 1	5	6	7	5
	4	9	7	5

6. The number is a common multiple of 2, 3, 4, 5, and 6. We can choose any of these numbers and test each of their multiples for divisibility by the other numbers.

We choose 6 as it will take less time to reach the answer.

6, 12, 18, 24, 30, 36, 42, 48, 56, 60, 66, ……

We can eliminate all that are not multiples of 5. This leaves 30 and 60. Since 30 is not a multiple of 4, the smallest number with factors 1, 2, 3 4, 5 and 6 is = 60

Answer: 60

7. Number of markers = 1 420 x 24

= (1 420 x 20) + (1 420 x 4) = 28 400 + 5 680

Answer: 34 080 markers

8. Ending in 2 makes the number even and hence divisible by 2 which makes it not prime.

Ending in 5 makes the number divisible by 5 and which makes it not prime.
Hence, the number can only end in 7.
Thus, the number may only be 527 or 257.
However, 527 is divisible by 17 and so is not prime.
257 is only divisible by itself and 1 and is prime.

Answer: 257

9.

30% of 15 | = | 15 % of 30

30% of 15 = $\frac{30}{100}$ x 15 = 4.5
15 % of 30 = $\frac{15}{100}$ x 30 = 4.5
Hence, we place = in the box.

10. From 1:00 pm to 2:00 pm, the digits that will total 10 on a digital clock are 1:09, 1:18, 1:27, 1:36, 1: 45 and 1: 54
This is a total of 6 times

Answer: 6

11. The line starts at 0.0 and ends at 5.5 cm.

Hence, the length is 5.5 cm

Answer: 5.5 cm

12. 18 $\frac{3}{4}$ kg = 18 kg 750 g

The mass of potatoes remaining in the bag is
18 kg 750 g – 6 kg 800 g
=11 kg 950g

Answer: 11 kg 950 g

	kg	g
	17	1750
	~~18~~	~~750~~
–	6	800
	11	950

13. We can compare the times by converting all to the same units.

Using minutes as the common unit:
310 seconds = 310 ÷ 60 minutes = $5\frac{1}{6}$ minutes
0.1 hour = $\frac{1}{10}$ x 60 minutes = 6 minutes
$5\frac{1}{6} < 6 < 7$
So, in ascending order we have 310 seconds, 0.1 hour, 7 minutes

Using seconds as the common unit
7 minutes = 7 x 60 = 420 seconds
0.1 hour = 0.1 x 60 x 60 = 360 seconds
310 < 360 < 420
So, in ascending order we have 310 seconds, 0.1 hour, 7 minutes.

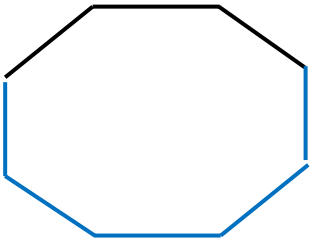
Answer: 310 seconds, 0.1 hour, 7 minutes

14. Layer 1 has 20 cubes. Layers 2-3 have 24 cubes. Layers 4-5 have 8 cubes

Total number of cubes is 20 + 24 + 8 = 52
So, 64 – 52 = 12 more cubes will be required to make up a cube of volume 64 units

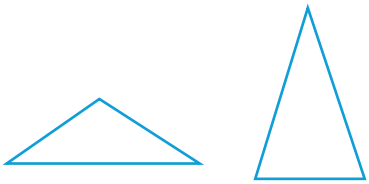
Answer: 12

15.

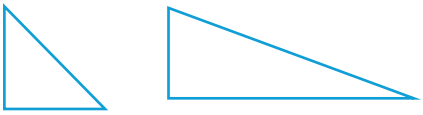


The cross section is 8-sided which is an octagon.

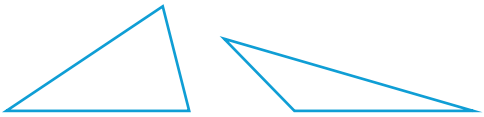
16. Isosceles triangles can differ in shape and size.



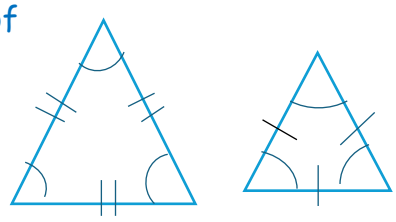
Right-angled triangles can differ in shape and size.



Scalene triangles can differ in shape and size.

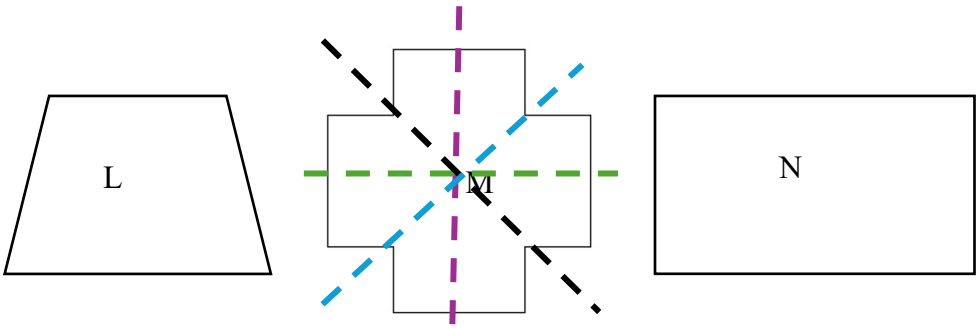


An equilateral triangle has equal sides and equal angles. All will have the same shape (similar) but the length of the sides can differ.



Answer: B. Equilateral

17.



L has only one line of symmetry (vertical) . N has two lines of symmetry (vertical and horizontal). M has 4 lines of symmetry, as shown.

Answer : M

18.

Score	Frequency	
1	𝍸 𝍸 I	11
2	𝍸 𝍸 𝍸 IIII	19
3	𝍸 𝍸 𝍸 III	18
4	𝍸 𝍸 𝍸 I	16
5	𝍸 𝍸 II	12
6	𝍸 𝍸	10

The frequency of the even numbers 2, 4 and 6 = 19 + 16 + 10 = 45

The frequency of the odd numbers 1, 3 and 5 = 11 + 18 + 12 = 41

The difference in frequency is 45 – 41 = 4

Answer : 4

19. Sham's total score in Maths, Social Studies and Science = 84 x 3 = 252

Hence, Sham's total score in Maths and Science = 252 – 82 = 170

Sham's Maths score (which is the same as his Science score) = 170 ÷ 2 = 85

Answer : 85

20. The number of children who has dogs = 17
The number of children who has cats = 12
This total is 17 + 12 = 29.

The class has 25 students which means 29 – 25 = 4 children were counted twice, thus having both a cat and a dog as pets. So, 4 children have more than one pet.

Answer : 4 children

SECTION 2 (39 marks)

21. We place all the quantities in the same units of measure.

We choose percent.

$4\frac{1}{5} \times 100 = 420\ \%$

$4.02 \times 100 = 402\ \%$

$400 < 402 < 420$

So, in descending order we have $4\frac{1}{5} < 4.02 < 4\frac{1}{5}$

Answer : $4\frac{1}{5}, 4.02, 400\%$

(2 marks)

22.

$6 + \square^2 = 65 + 22 = 87$

$\square^2 = 87 - 6$

$\square^2 = 81$

$\square = 9$

(2 marks)

23. Number of boxes = $7.2 \div 0.6 = 72 \div 6 = 12$

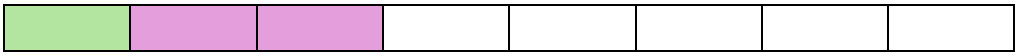
So, Cherise can wrap 12 boxes

Answer: 12 boxes

(2 marks)

24. Let us represent the fraction of the book she read on Tuesday and Wednesday using a whole divided into eighths. On Tuesday she read one-eighth and on Wednesday she read one quarter or two-eighths.

Tuesday Wednesday



Therefore $1 - \frac{3}{8} = \frac{5}{8}$ is the fraction of the book that was read on Monday.

Five-eighths of the pages = 40
One-eight of the pages = 40 ÷ 5 = 8
Hence, the number of pages in the book = 8 x 8 = 64

Answer: 64 pages

(2 marks)

25.

2 lilies are used with every 1 rose.

L	L	R

So, in a bouquet of 12 flowers there will be 8 lilies 4 roses.

L	L	R
L	L	R
L	L	R
L	L	R

Cost of 1 bouquet = $8 x 4 + $6 x 8 = $32 + $48 = $80

Answer: $80

(3 marks)

26. Number of litres of milk produced by the cows = (6 x 18) + (5 x 12) litres
= 108 + 60 = 168 litres

Number of cows = 18 + 12 = 30
Cost of care for all the cows = $10 x 30 = $ 300

Selling price of 168 litres at $3 per litre = $3 x 168 = $ 504

Profit = Selling price of the milk – Cost of caring for the cows
= $ 504 - $300 = $ 204

Answer: $ 204

(3 marks)

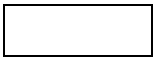
27. A group of 4 and a group of 3 has a total of 7 students
If the groups were equal then there would be 42 ÷ 7 = 6 groups of each.
But, the number of groups of 4 exceeds the number of groups of 3

We try 7 groups of 4 = 28 with remainder 14 but which will NOT be divisible by 3
We try 8 groups of 4 = 32 with remainder 10 but which will NOT be divisible by 3
We try 9 groups of 4 = 36 with remainder 6 and which is divisible by 3 to make 2 groups of 3
So, the number of groups of four is 9

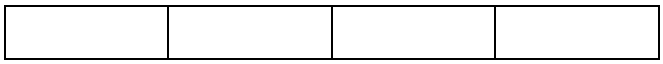
Answer: 9 groups of four

(3 marks)

28. If we represent the cost of the tie as 1 unit, then the shirt will cost 2 units and the pair of shoes will cost 4 units.

Tie 

Shirt 

Shoe 

Four shirts = 8 units One pair of shoes = 4 units Two ties = 2 units
Four shirts + one pair of shoes + two ties cost $770
8 units + 4 units + 2 units = $770
14 units cost = $770
1 unit costs = $770 ÷ 14 = $55
Therefore, the cost of 1 tie = $55

OR

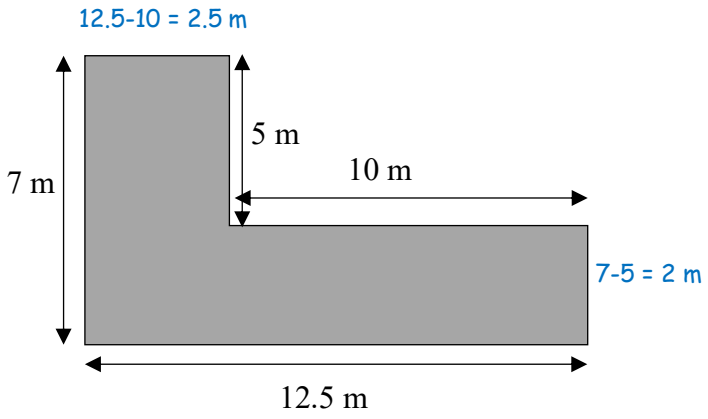
If the tie is $\frac{1}{2}$ the cost if a shirt then a shirt is 2 x price of a tie.
So, 1 shirt costs the same as 2 ties
Then, 4 shirts cost the same as 4 x 2 = 8 ties.
The cost of the pair of shoes is twice the price of a shirt
One pair of shoes cost the same as 2 shirts = 2 x cost of 2 ties = Cost of 4 ties

So, the cost of 2 ties + cost of 4 shirts + cost of a pair of shoes is equivalent to the cost of (2 ties + 8 ties + 4 ties) = 14 ties.
Hence the cost of 14 ties = $770
Therefore, the cost of 1 tie = $770 ÷ 14 = $ 55

Answer: $55

(3 marks)

29.



We first find the length of the missing sides – see diagram.
Then, we add all the lengths of the edges of the shape.

Perimeter = 2.5 + 5 + 10 + 2 + 12.5 + 7 = 39 m

Answer: 39 m

(2 marks)

30. The heights, arranged in descending order are:

2 m 23 cm > 2 m 4 cm > 1 m 65 cm > 1 m 53 cm > 1 m 38 cm

Difference in height between the tallest tree and the shortest tree

= 2 m 23 cm – 1 m 38 cm.

= 223 cm – 138 cm = 85 cm

Answer: 85 cm

(2 marks)

31. Total number of laps = 8

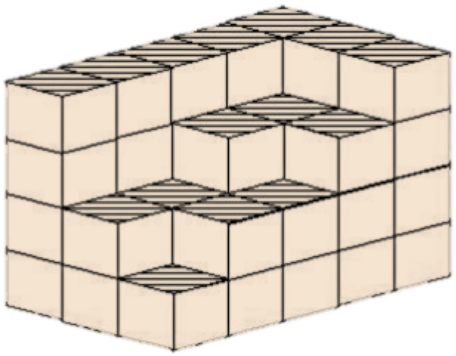
Time to run the 8 laps = 8 $\frac{1}{2}$ x 8 = 68 minutes
Rest time = 11 minutes.
Sherry completes her running and rest in 68 + 11 = 79 minutes = 1 hour 19 minutes.

Sherry would have completed her running 1 hr 19 mins after 6:15 pm or 7:34 pm

Answer: 7:34 pm

(3 marks)

32.

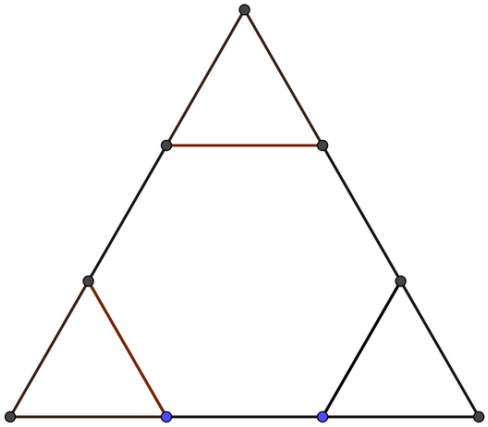


Number of cubes at the start = 7 + 10 + 14 + 15 = 46
Number of cubes removed = 7 + 3 + 4 + 1 = 15
Number of cubes remaining = 46 – 15 = 31
Volume of 1 cube = 2x 2 x 2 = 8 cm^3
Hence, volume of the remaining solid = 8 x 31 = 248 cm^3

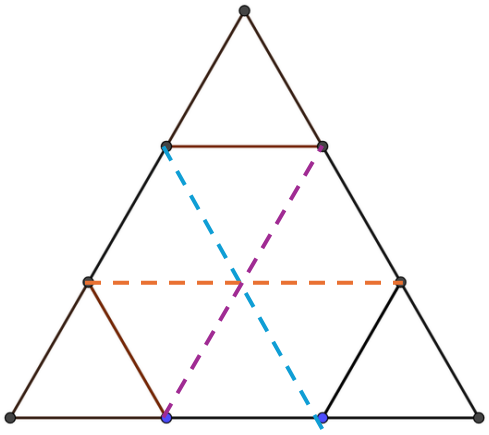
Answer: 248 cm^3

(3 marks)

33.



Original

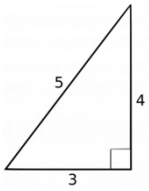


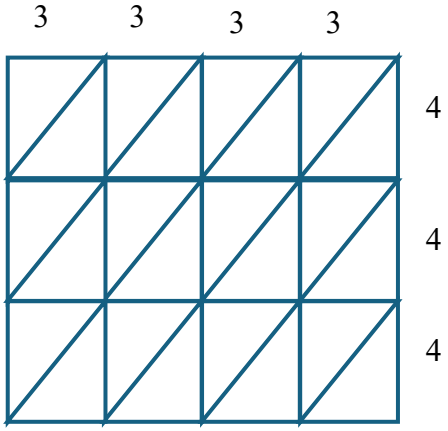
Answer

(2 marks)

34.

The smallest square will be of side 12 cm and will comprise 24 triangles.
The arrangement of the triangles is shown below.





Answer: 12 cm

(2 marks)

35.

Ice cream Flavour	Number of students
Vanilla	25
Chocolate	35
Coconut	55
Strawberry	30
Soursop	15
Mango	20
TOTAL	180

50 % of 180 = $\frac{1}{2}$ x 180 = 90
Number who chose Vanilla, Chocolate and Strawberry = 25 + 35 + 30 = 90
Hence, 50% chose three flavours.
Note that 50% also chose Coconut, Soursop and Mango.

Answer: Miss Kim was correct

(2 marks)

36. Total number of unsold tickets = 1 730 + 2 470 = 4 200

Number of tickets sold = 5000 x 2 - 4 200 = 5 800

Therefore, income earned from the sales = 5 800 x $60 = $ 348 000

Answer: $ 348 000

(3 marks)

SECTION 3 (16 marks)

37. We know that there was no remainder when Mr Albert gave 5 marbles to each boy. Two marbles remained when he gave 4 or 3 marbles to each boy.

I. The number of marbles is a multiple of 5..
II. The number of marbles is two more than a multiple of 4
III. The number of marbles is two more than a multiple of 6.

We now list the multiples of 5 (Condition I) and test each one to see if conditions II and III are met.

5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60	Multiples of 5
10 30 50	Multiples of 4 plus 2
20 50	Multiples of 6 plus 2

Hence, 50 is the smallest number of marbles that can be in the bag.
OR
Sharing 4 marbles each or 6 marbles each leaves a remainder of 2
The smallest number that is divisible by both 4 and 6 is 12
Therefore, the number of marbles is 2 more than a multiple of 12
Sharing 5 marbles gives no remainder. Hence the number of marbles is a multiple of 5

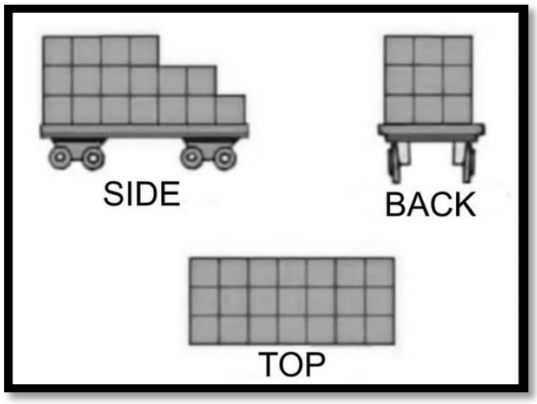
We now look for the smallest number which is 2 + a multiple of 12 and which is divisible by 5

1 x 12 + 2 = 14 which is NOT divisible by 5
2 x 12 + 2 = 26 which is NOT divisible by 5
3 x 12 + 2 = 38 which is NOT divisible by 5
4 x 12 + 2 = 50 which is divisible by 5
The smallest number of marbles that can be in the bag = 50

Answer: 50

(4 marks)

38.



a) Number of small cubes

Top row has 4 x 3 = 12 cubes
Middle row has 6 x 3 = 18 cubes
Bottom row has 7 x 3 = 21 cubes
Total number of blocks = 12 + 18 + 21 = 51

Answer: 51

b) Dimensions possible

Using the above conditions, we try possible dimensions to obtain a volume that is closest to 78.

Length	Width	Height	Volume
6	6	2	72
5	5	3	75
4	4	4	64

A cuboid of dimensions 5 x 5 x 3 will give him the largest possible volume.

Answer: 5 x 5 x 3

(4 marks)

39.

a)

Figure Number	Number of blocks	Pattern
1	1	1 + 0 = 1
2	3	2 + 1 = 3
3	5	3 + 2 = 5
4	7	4 + 3 = 7
		(Fig No.) + (Fig No. – 1)
14	27	14 + 13 = 27

We observe that the total number of blocks is the sum of two consecutive number, starting with the Figure Number and adding one less than the Figure number. So, for 27 blocks we can deduce that since 27 = 14 + 13, the Figure Number is 14.

OR

For each figure, the number of blocks increase by 2

The number of blocks is (2 x the figure number) - 1
So, (2 x Figure number) - 1 = 27
2x Figure number = 27 + 1 = 28

Figure number with 27 blocks = 28 ÷ 2 = 14

Answer: Figure 14

b)

For each figure, the number of blocks increase by 2. If there are 44 blocks in two consecutive structures, then each structure will have 21 and 23 blocks.

From part (a), The number of blocks = (Fig No) + (Fig No – 1)

For 21 blocks, 21 = 11 + 10, so Figure 11 will have 21 blocks.

For 23 blocks, 23 = 12 + 11, so Figure 12 will have 23 blocks.

OR

Total number of blocks in two consecutive figures 44 = 21 + 23

We know that: The number of blocks is (2 x the figure number) - 1

Figure 11 will have (2 x 11) - 1 = 21 blocks and
Figure 12 will have (2 x 12) - 1 = 23 blocks

Answer: Figure 11 and Figure 12

(4 marks)

40.

Contestant	Mean score on Rounds 1-5	Score on Round 6
Jackie	8.2	5
Karen	7.8	8
Mala	7.6	7

(a)

Jackie's total score in Rounds 1-5 = 8.2 x 5 =41
Jackie's total score in Rounds 1-6 = 41 + 5 = 46
Jackie's mean after 6 rounds = 46 ÷ 6 = 7.67

Karen's total score in Rounds 1-5 = 7.8 x 5 = 39
Karen's total score in Rounds 1-6 = 39 + 8 = 47
Karen's mean after 6 rounds = 47 ÷ 6 = 7.83

Mala's total score in Rounds 1-5 = 7.6 x 5 = 38
Mala's total score in Rounds 1-6 = 38 + 7 = 45
Jackie's mean after 6 rounds = 45 ÷ 6 = 7.5

7.83 > 7.67 > 7.5

So, Karen won since she had the highest mean of 7.83.

(b)

Since Karen had a total score of 47 while Jackie had 46. To win Karen, Jackie needed to increase her final score to 48. So, she would need at least 2 more points in round 6 to win. She would need a minimum of 5 + 2 = 7.

Answer: 7

(4 marks)

END OF TEST

FAS-PASS
Maths

PRACTICE TESTS FOR SEA MATHEMATICS

DETAILED SOLUTIONS

TEST BOOKLET 8

TEST CODE KA2508

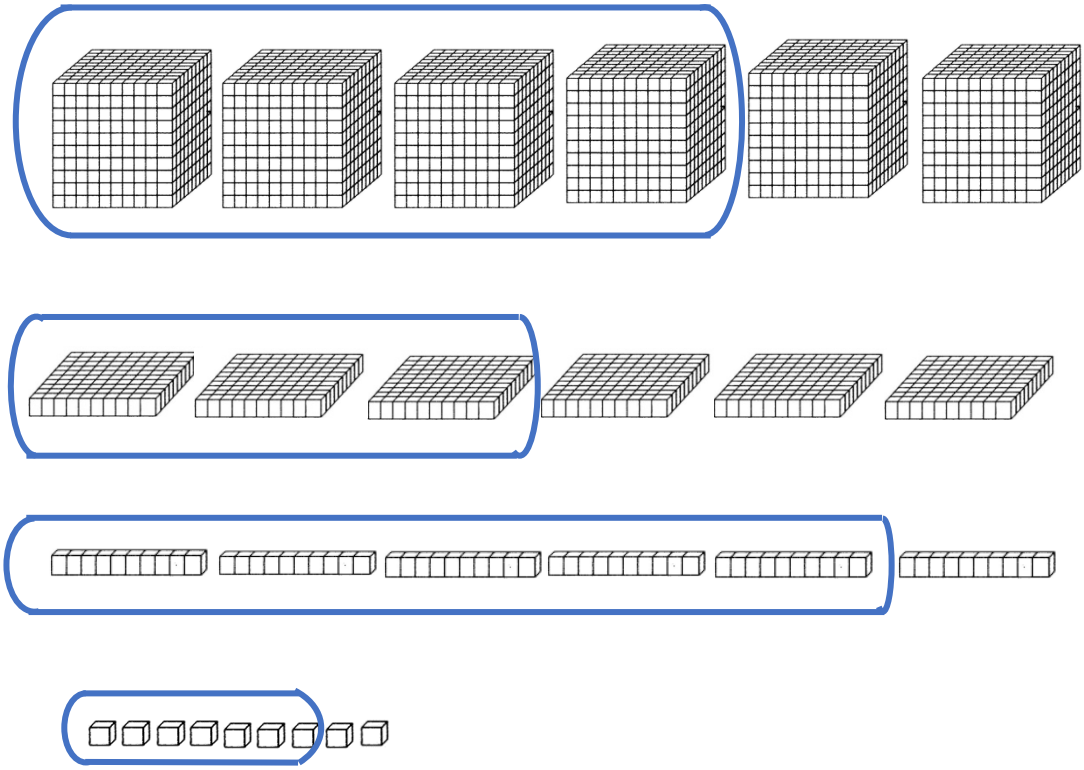
AUTHORS

Dr SHEREEN A. KHAN & Dr FAYAD W. ALI

2025-2028 ASSESSMENT FRAMEWORK

SECTION 1(20 marks)

1.



In the first row, each block represents 1000, so we circle 4 blocks to represent 4 000.
In the second row, each block represents 100, so we circle 3 blocks to represent 300.
In the third row, each block represents 10 so we circle 5 blocks to represent 50.
In the fourth row, each block represents 1 so we circle 7 blocks to represent 7.
Total = 4 000 + 3 00 + 50 + 7 = 4 357

2.

Multiples of 3 greater than 15 and less than 23 are 12, 15, 21,
So, there are three multiples of 3 between 13 and 23

Answer: 3

3.

10	1	$\frac{1}{10}$	$\frac{1}{100}$
1	6	5	3

So, 3 represents; $3 \times \frac{1}{100} = \frac{3}{100}$

Answer: $\frac{3}{100}$

4. $\frac{54}{150} \times 100 = 36\%$

Answer: 36%

5.

168 ÷ 25 = 6 and remainder 18

So, 6 buses will be insufficient and a 7th bus will be required.

Answer: 7 buses

6.

$\frac{1}{5}$ + $\frac{4}{10}$

$\frac{2}{10}$ + $\frac{4}{10}$ = $\frac{6}{10}$ = $\frac{3}{5}$

So, for the result, we need to shade 3 of the 5 sectors,

7. 115% [=] $1\frac{3}{20}$

We can compare the two values when both are expressed in the same form.
We choose percentage
$1\frac{3}{20}$ as a percentage = $\frac{23}{20}$ x 100 = 115 %
Hence, we place an equal sign in the box.

8. We examine the first decimal place. Then we examine the second decimal place

1	$\frac{1}{10}$	$\frac{1}{100}$
7	0	9
7	0	0
7	9	0
7	0	1
7	1	0

1	$\frac{1}{10}$	$\frac{1}{100}$
7	0	9
7	0	0
7	0	1

The highest score is 7.90 and
the second highest score is 7.10

The third highest score is 7.09,
the fourth highest score is 7.01
and the fifth highest score is 7.00

Answer: 7.00, 7.01, 7.09, 7.10, 7.90

9. The number of erasers removed = $\frac{1}{7}$ x 140 = 20
The number that remained = 140 - 20 = 120

OR

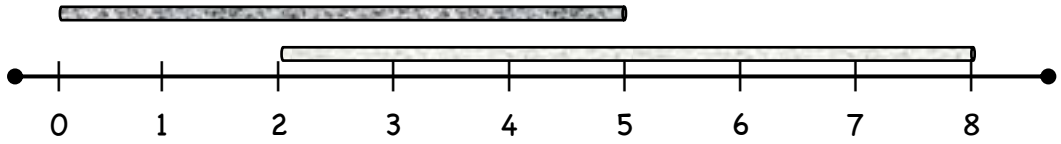
If $\frac{1}{7}$ was removed then 1 - $\frac{1}{7}$ = $\frac{6}{7}$ would have remained in the box
This is $\frac{6}{7}$ x 140 = 120

Answer: 120 erasers

10. Number of working hours in 12 days = 8 x 12 = 96
Number of hours Glen takes to make 1 box = 2
Number of boxes that Glen will make
= Number of working hours ÷ Number of hours required to make 1 box
= 96 ÷ 2 = 48

Answer: 48 boxes

11.

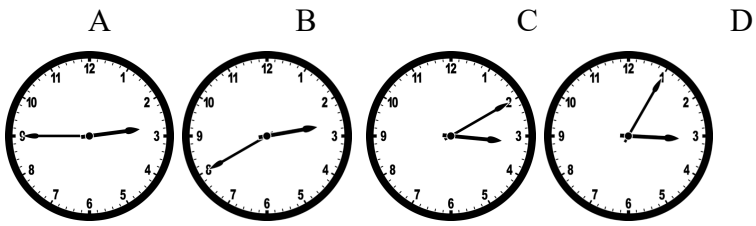


Length of the top straw = 5 – 0 = 5 units
Length of the bottom straw = 8 – 2 = 6 units
Difference in length = 6 - 5 = 1 unit

Answer: 1 unit

12. Answer: Cubic centimetre is most suitable

13.



A shows 15 minutes before 3 o'clock
B shows 20 minutes before 3 o'clock
C shows 10 minutes after 3 o'clock
D shows 5 minutes after 3 o'clock

$5 < 10 < 15 < 20$

So, the closest time to 3 o'clock is shown by clock D

Answer: D

14.

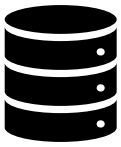
A

2 kg 30 grams

B

2 400 grams

C

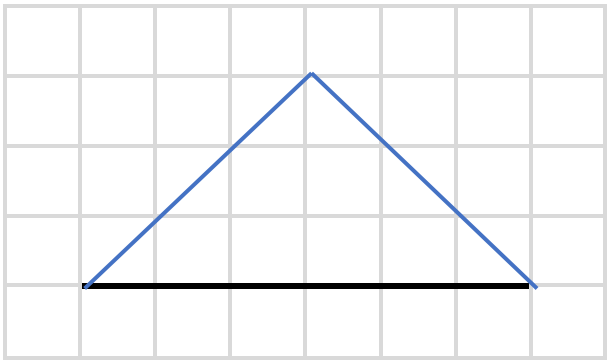


2.05 kg

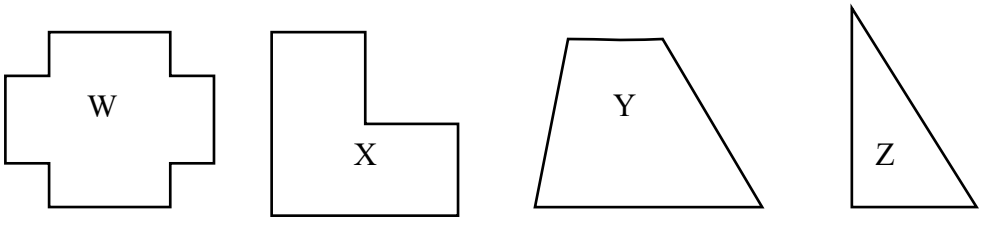
We can compare the weights by converting all of them to grams
2 kg 30 g = 2 x 1 000 + 30 = 2 030 g
2.05 kg = 2.05 x 1 000 = 2 050 g
2 030 < 2 050 < 2 400

Answer: 2 kg 30 g, 2.05 kg, 2 400 g which is A, C, B

15. A sample solution.



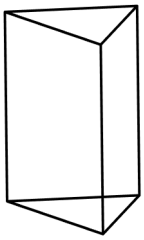
16.



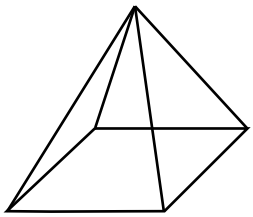
Shape W has 4 lines of symmetry and Shape X has an oblique line of symmetry.
Y and Z do not have any lines of symmetry

Answer: Y and Z

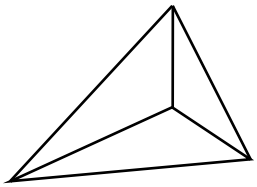
17.



A



B



C

B is a square-based pyramid and C is a triangular-based pyramid.
The opposite faces of A are identical triangles and the faces are joined by parallel lines. Hence A is a triangular prism

Answer: A

18. The sum of all three numbers = 12 x 3 = 36
If we remove the number 8 from the three numbers, then the total of the other two numbers = 36 - 8 = 28

Hence, the mean of the other two numbers will be 28 ÷ 2 = 14

Answer: 14

19. The score that occurred most times, that is, the one with the highest frequency of 7 is 2.

Answer: 2

20. The number who purchased sno-cones = 56
The number who purchased palettes = 42
The number who purchased ice-cream = 50
The number who purchased soft-drinks = 34

Total who made purchases = 56 + 42 + 50 + 34 = 182
So, the number of students who did not make a purchase = 200 -182 = 18

Answer: 18

SECTION 2 (39 marks)

21. For every 5 mango trees there are 2 plum trees
In 55 mango trees, there are 55 ÷ 5 = 11 groups of 5
Therefore, the number of plum trees will be 11 groups of 2 = 2 x 11 = 22
OR

The fraction of the trees that are mango = $\frac{5}{2+5} = \frac{5}{7}$ and the fraction of the trees that are plum = $\frac{2}{2+5} = \frac{2}{7}$
So, $\frac{5}{7}$ of the trees = 55 and $\frac{1}{7}$ will be 55 ÷ 5 = 11
The number of plum trees is $\frac{2}{7}$ which will be 11 x 2 = 22
Answer: 22 plum trees

(2 marks)

22. Decrease over the year = $\frac{10}{100}$ x $60 000 = $6 000

So, the value at the end of the year = $ 60 000 - $6 000 = $54 000
OR
The value of the car will be (10 – 10) = 90 % of the value at the start of the year.

= $\frac{90}{100}$ x $60 000 = $54 000
Answer: $54 000

(2 marks)

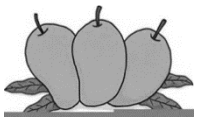
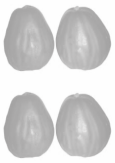
23. 12 x $\frac{1}{3}$ kg = 4 kg 8 x $1\frac{1}{4}$ kg = 10 kg

Total mass of the pumpkin = 4 + 10 = 14 kg

Answer: 14 kg

(2 marks)

24.

Mangoes	Pears	Bananas
		
3 for $8	4 for $7	6 for $7

Fruits are sold in groups of 3, 4 or 6. If she buys the same number of fruits then the smallest number of fruits she can buy must be a multiple of 12.
Assume that she buys 12 of each fruit:

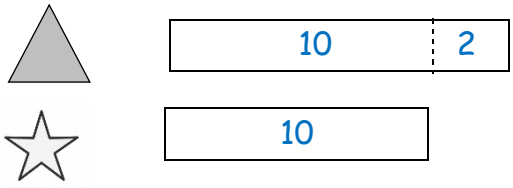
If 3 mangoes cost $8 then 12 will cost $\frac{8}{3}$ x 12 = $32
If 4 pears cost $7 then 12 will cost $\frac{7}{4}$ x 12 = $21
If 6 bananas cost $7 then 12 will cost $\frac{7}{6}$ x 12 = $14
Total Cost = $ 32 + $21 + $14 =$ 67

So, Mrs Sandy bought 12 of each fruit

Answer: 12

(2 marks)

25. We can represent two numbers whose difference is 2 and whose sum is 22 using the following bar model. In this case,  has the larger value.



Hence the numbers are 10 and 12 and their product is 10 x 12 = 120

OR

If we add both equations, we get  +  = 22 + 2 = 24

 = 24 ÷ 2 = 12

The difference in values is 2, so  = 12 – 2 = 10

Hence  x  = 10 x 12 = 120

Answer: 120

(3 marks)

26. 34 children and Miss Benson is a total of 35

Therefore, the number of cars required = 35 ÷ 5 = 7
The cost of using cars will be $120 x 7 = $840

The number of minivans required = 35 ÷ 7 = 5
The cost of using minivans will be $170 x 5 = $850

Cars will be $850 - $840 = $10 less than the minivans

Answer: Cars cost $10 less

(3 marks)

27. We compile a table listing all possibilities for 8 students.

Number of boys	Number of girls	Total number of pencils (Boys x 2) + (Girls x 3)
1	7	(1 x 2) + (7 x 5) = 37
2	6	(2 x 2) + (6 x 5) = 34
3	5	(3 x 2) + (5 x 5) = 31
4	4	(4 x 2) + (4 x 5) = 28
5	3	(5 x 2) + (3 x 5) = 25
6	2	(6 x 2) + (2 x 5) = 22
7	1	(7 x 2) + (1 x 5) = 19

Answer: 6 boys

(3 marks)

28. We can examine the amount spent each day and add this to what they had left. Recall, Ali had $12 left and Kazim had $24 left.

Day	Amount spent by Ali	Amount Ali would have had at the start	Amount spent by Kazim	Amount Kazim would have had at the start
1	$8	$8 + $12 = $20	$5	$5 + $24 =$29
2	$16	$16 + $12 = $28	$15	$10 + $24 =$34
3	$24	$24 + $12 = $36	$20	$15 + $24 =$39
4	$32	$32 + $12 = $44	$25	$20 + $24 =$44

On day 4 both had the same amount, therefore, each had $44 at the start.

OR

Ali's money =$8 x Number of days + $12
Kazim's money = $5 x Number of days + $24
Let us denote the number of days by $\square$

Therefore, $(8 \times \square) + 12 = (5 \times \square) + 24$

$(8 \times \square) = (5 \times \square) + 12$

$(3 \times \square) = 12$

$\square = 4$

Therefore, number of days = 4
Ali's money = ($8 x 4) + $12 = $44
Kazim's money = ($5 x 4) + $24 = $44

Alternatively, we can try values for the number of days until both sides are equal.

Answer: $44

(3 marks)

29.

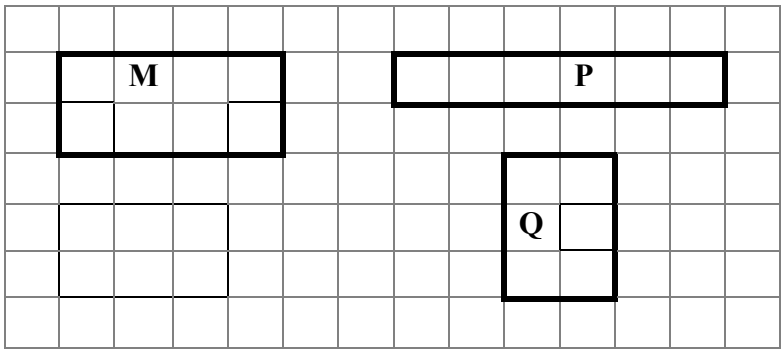


Figure	Area	Perimeter
M	4 x 2 = 8 units^2	2 (4 + 2) = 12 units
P	6 x 1 = 6 units^2	2 (6 + 1) = 14 units
Q	2 x 3 = 6 units^2	2 (3 + 2) = 10 units

P and Q have the same area of 6 square units but their perimeters differ.

Answer: P and Q

(2 marks)

30. 10 bags with 450 g each, will hold a total of 450 g x 10 = 4 500 g = 4.5 kg

Therefore, amount of flour left in the bag = 6 kg – 4.5 kg = 1.5 kg

Answer: 1.5 kg

(2 marks)

31. 1 litre = 1 000 cm^3

Tank holds 360 litres = 360 x 1 000 cm^3

1 metre = 100 cm

1.5 m = 1.5 x 100 cm = 150 cm

0.6 m = 0.6 x 100 cm = 60 cm

The volume of the rectangular-based tank = Length x Breadth X Height

Therefore 150 x 60 x Height = 360 x 1000

9 000 x Height = 360 000

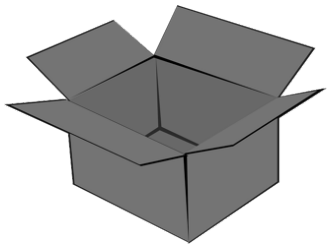
Height = 360 000 ÷ 900 = 40 cm

Height in metres = 40 ÷ 100 = 0.4 m

Answer: 0.4 m

(3 marks)

32.



The two longer rectangular flaps will be the length of the box by $\frac{1}{2}$ the width = 60 cm by $\frac{1}{2}$ (36 cm) = 60 cm by 18 cm

The two shorter rectangular flaps will be the width of the box by $\frac{1}{2}$ the length = 36 cm by $\frac{1}{2}$ (60 cm) = 36 cm by 30 cm

Answer: 60 cm by 18 cm AND 36 cm by 30 cm

(3 marks)

33.

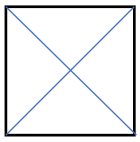
O P X T V H

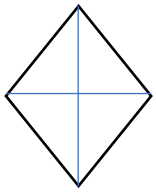
O has an infinite number of lines of symmetry
P has no lines of symmetry
X has two lines of symmetry (vertical and horizontal)
T has one line of symmetry (vertical)
V has one line of symmetry (vertical)
H has two lines of symmetry (vertical and horizontal)

Answer: We circle X and H

(2 marks)

34. Quadrilaterals whose diagonals perpendicular to each other:





Answer: Square and rhombus

(2 marks)

35. The number of patients who visited on Saturday is 5 blocks high.

The number of patients who visited on Sunday is 3 blocks high.
Therefore, 8 blocks represent = 200 patients
One block represents = 200 ÷ 8 = 25 patients

Hence, on Saturday 2 x 25 = 50 more patients visited the Health Centre than on Sunday

Answer: 50

(2 marks)

36.

Mark's mean score is

(20 + 16 + 18 + 12 + 14) ÷ 5 = 80 ÷ 5 =16

One of his scores is 16 and 16 is equal to the mean.
If 16 is removed then his mean will be
(20 + 18 + 12 + 14) ÷ 4 = 64 ÷ 4 =16
His mean remains the same.
Note his mean would not remain the same if another score was removed. For example, if we remove 18, the mean changes.
(20 + 16 + 12 + 14) ÷ 4 = 62 ÷ 4 =15.5

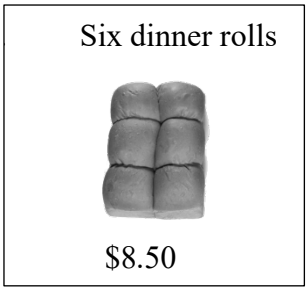
Marva's mean score is
(17 + 19 + 13 + 21 + 10) ÷ 5 = 80 ÷ 5 = 16,

Notice that, unlike Mark, none of Marva's scores is equal to the mean of 16.
So, the removal of any score will affect her mean score.
For example, if we remove 13, her mean will be
(17 + 19 + 21 + 14) ÷ 4 = 71 ÷ 4 =17.75

(3 marks)

SECTION 3 (16 marks)

37.



Using sliced bread
Gail gets 2 sandwiches from 3 slices of bread
So, for 120 sandwiches she will need $\frac{120}{2}$ x 3 = 180 slices
Gail will require 180 ÷ 20 = 9 loaves
Cost = $18 x 9 = $162

Using rolls
Gail gets 1 sandwich from 1 roll
So, for 120 sandwiches she will need 120 rolls
Gail will require 120 ÷ 6 = 20 sets of 6 rolls
Cost = $8.50 x 20 = $170

So, the option with the sliced bread will be less costly by $170 - $162 = $8

Answer: The sliced bread will be less expensive.

(4 marks)

38.

AUGUST

SUN	MON	TUE	WED	THU	FRI	SAT
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

There are 15 even days. So, Fazia would have read 15 x 9 = 135 pages
There are 16 odd days. So, Ellie would have read 16 x 8 = 128 pages
There are 4 Saturdays and 4 Sundays. So, Kamla would have read
(16 x 4) = 64 pages on Saturdays and
(17 x 4) = 68 pages on Sundays
Kamla would have read 64 + 68 = 132 pages
Since the book has 138 pages, none of the girls would have finished reading it.

Answer: None of the girls will finish.

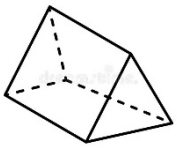
(4 marks)

39.

Length	Number of straws
10 cm	7
6 cm	14

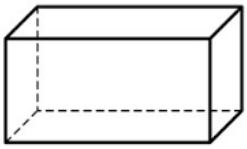
Solid 1 – A triangular prism

6 of shorter (6 cm) for the triangular faces and 3 of longer (10 cm) for the parallel sides.



Solid 2 – A square prism

8 of shorter (6 cm) for the square sides and 4 of longer (10 cm) for the rectangular sides.



Answer: A triangular prism and a square prism

(4 marks)

40. From the graph, we can read off the number of units used in the first 3 months.

January-360, February-440 and March 300

The mean number of units used in the first three months

= (360 + 420 + 300) ÷ 3 = 1 080 ÷ 3 = 360

Since the mean for the months of April, May and June is the same as for January, February and March, then the total number of units used is the same for both periods.

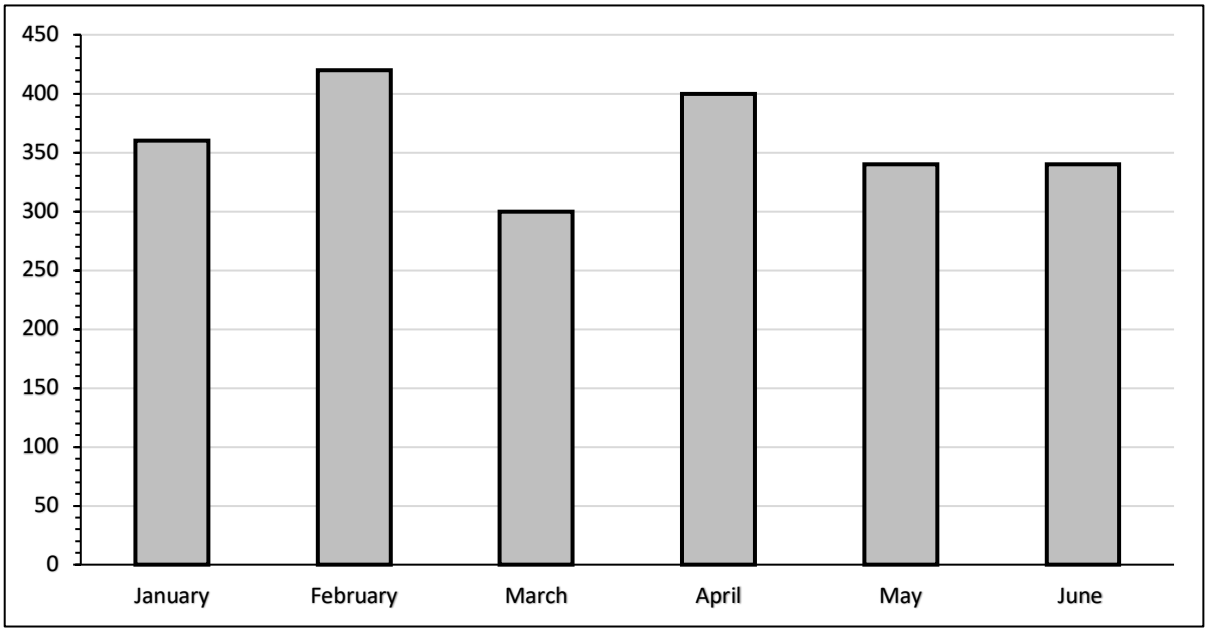
Number of units used in April, May and June =1 080

The number of units used in May is the same as the number of units used in June and the number of units used in April is 60 more than the number used in May or June.

So, the number of units used in May or June = (1 080 – 60) ÷ 3 = 340

Therefore, the number of units used in April = 340 + 60 = 400, May = 340 and June 340

The bar chart can now be completed to give:



(4 marks)

END OF TEST

FAS-PASS
Maths

PRACTICE TESTS FOR SEA MATHEMATICS

DETAILED SOLUTIONS

TEST BOOKLET 9

TEST CODE KA2509

AUTHORS

Dr SHEREEN A. KHAN & Dr FAYAD W. ALI

2025-2028 ASSESSMENT FRAMEWORK

SECTION 1(20 marks)

1. We first convert to expanded notation.

$1 \times 1\,000 + 5 \times 100 + 2 \times 10 + 4 \times 1 + 6 \times 0.1 + 8 \times 0.01$

$= 1\,000 + 500 + 20 + 4 + 0.6 + 0.08$

$= 1\,524.68$

Answer: 1 524.68

	Th	H	T	O	t	h
	1	0	0	0		
		5	0	0		
			2	0		
+				4		
				0	6	
				0	0	8
	1	5	2	4	6	8

2. $4\frac{4}{5} \times \frac{5}{12}$

$= \frac{(5 \times 4)+4}{5} \times \frac{5}{12}$

$= \frac{24}{5} \times \frac{5}{12} = 2$

Answer: 2

3. 200 - 43☐ and 250 – 16 = 234

So, 157 + ☐ = 234

Hence ☐ = 234 – 157 = 77

Answer: ☐ = 77

4. $\frac{80}{80} \times 100 = 100\ \%$

Answer: 100%

5.

1
1 2 1
1 3 3 1
1 4 6 4 1

The next row will be: 1 1+4 4+6 6+4 4+1 1
1 5 10 10 5 1

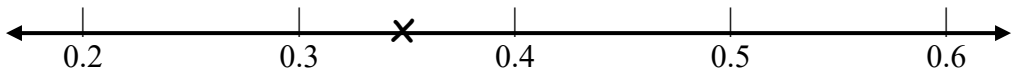
Answer: 1 5 10 10 5 1

6. 12 of 10c coins = 12 x 10c = $1.20

7 of 5c coins = 7 x 5c = $0.35
8 of 1c coins = 8 x 1c = $0.08
Total = $ 1.63
Answer: $ 1.63

7.

0.35 is halfway between 0.3 and 0.4



8. The smallest number that can be divided by 3, 5 or 7 is 3 x 5 x 7 = 105.

Hence the smallest number that will leave a remainder of 2 when divided by 3 or 5 or 7

= 105 + 2 = 107

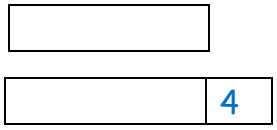
Answer: 107

9. When rounded to 1 d.p,

5.44 ⟶ 5.4 5.49 ⟶ 5.5 5.55 ⟶ 5.6

Answer: B

10.



We subtract 4 from the sum of both numbers

28 – 4 = 24.

2 units = 24

1 unit = 12

Hence, the smaller number is 12 and the larger number is 12 + 4 = 16

Answer: 16

11. Amount of water required = 150 mls x 30 = 4 500mls

4 500 mls ÷ 1 000 = 4.5 litres

Answer: 4.5 litres

12. The time on the clock shows the arrival time as 2: 20

Therefore, the departure time = 2hr 20min - 30 min

= 1:50 or 10 minutes before 2 o'clock

	Hours	Minutes
	1	80
	~~2~~	~~20~~
–		30
	1	50

Answer: 1:50 or 10 minutes before 2 o'clock

13.

Volume of cube = 1 m x 1 m x 1 m = 1 m^3

Answer: A

14. $\frac{3}{4}$ kg = 1000 g x $\frac{3}{4}$ = 750g

4 slices weighing $\frac{3}{4}$ kg each has a total weight of 750g x 4 = 3 000 g

Therefore, one-half of the pumpkin weighs 3 000g

If the other half is cut into two equal slices, each slice will weigh

3 000g ÷ 2 = 1 500 g

Answer: 1 500 g

15.

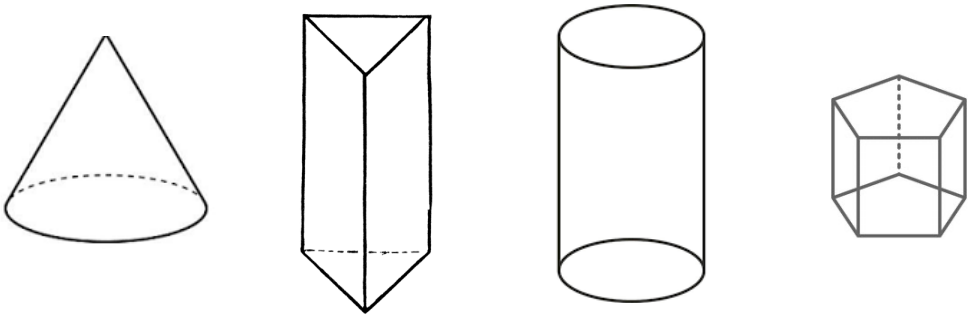


Fig A Fig B Fig C Fig D

A prism has a uniform cross-section, which means it has identical opposite faces that are parallel to each other. These faces must be polygons.
The cylinder (Figure C) is not a prism because its congruent faces are not polygons.
The cone (Figure A) is not a prism because it has a non-uniform cross-section.

In the above figures, only B and D are prisms

Answer: B and D

16.

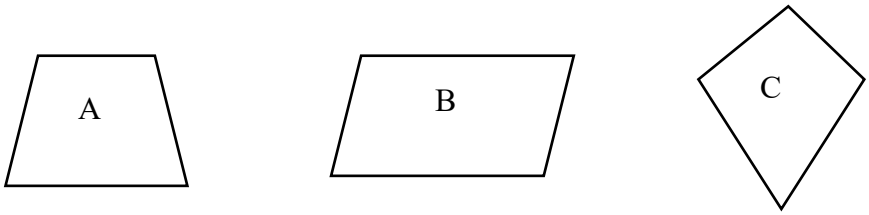
E K H Z M F

E and H have 2 lines of symmetry Vertical and horizontal). K has a horizontal line of symmetry and M has a vertical line of symmetry.

Z and F have no lines of symmetry.

Answer: Z and F

17.



The opposite sides of a parallelogram are both parallel and equal. This is the case only in Figure B.

Answer: B

18. The number who chose Maths = 3
The number who chose Art = 4
The number who chose Science = 5
The number who chose English = 3
The subject most chosen is Science which is the mode

Answer: Science

19.

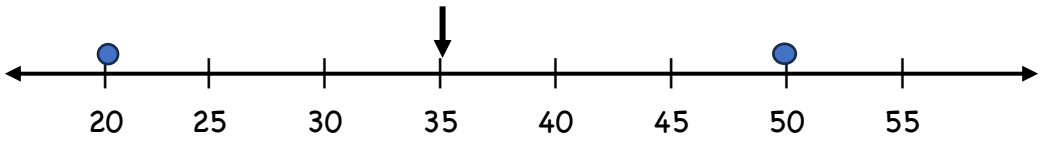
Class	Std 1	Std 2	Std 3	Std 4	Std 5
Number of books	21	28	32		

The number of books that were distributed to Std 4 and Std 5
150 – (21 + 28 +32) = 69

Std 5 got 7 more books than Std 4.
Therefore Std 4 got (69 -7) ÷ 2 = 31
So Std 4 got 31 and Std 5 got 31 + 7 = 38

Answer: Std 4 got 31 books and Std 5 got 38 books.

20. The arrow is on 35, hence the mean of the two numbers is 35.



If the mean of two numbers = 35, then their total is 35 x 2 = 70
If one number is 20 then the other is 70 – 20 = 50.
So, the dot is to be drawn at 50

Alternatively, the mean is 35 and both scores will even out at 35. Since 20 is 15 less than 35 the other score will be 15 more than 35 or 50.

Answer: Draw the dot at 50

SECTION 2 (39 marks)

21. Jeffrey's increase in salary = \$6 000 - \$ 5000 = \$1 000

Percentage increase = $\frac{1\,000}{5\,000}$ x 100 = 20 %

Therefore, the assistant's new salary

= \$3 000 + (20% of \$ 3 000) = \$3 000 + ($\frac{20}{100}$ x \$3 000)

= \$3 000 + \$600 = \$ 3 600

OR

Assistant's new salary = 120% of \$3 000 = $\frac{120}{100}$ x \$3 000 = \$3 600

Answer: \$3 600

(2 marks)

22. 4 bottles $\frac{1}{2}$ filled ≡ 4 x $\frac{1}{2}$ = 2 bottles

4 bottles $\frac{1}{4}$ filled ≡ 4 x $\frac{1}{4}$ = 1 bottle

6 bottles $\frac{1}{3}$ filled ≡ 6 x $\frac{1}{3}$ = 2 bottles

Total = 2 + 1 + 2 = 5 bottles

Therefore, Rachael can fill 5 bottles with the remaining fruit punch.

Answer: 5 bottles

(2 marks)

23. The mixture has 3g of silver to 7g of gold

S	S	S	G	G	G	G	G	G	G

Silver will comprise $\frac{3}{10}$ of the mass of the necklace and gold will comprise the remaining $\frac{7}{10}$ the mass of the necklace.
The necklace weighs = 40 g
Mass of silver = $\frac{3}{10} \times 40 = 12g$

Answer: 12g

(2 marks)

24.

Country	Population	Estimate
Jamaica	2 985 094	3 000 000
Qatar	2 879 915	3 000 000
Gambia	2 558 482	3 000 000
Trinidad & Tobago	1 406 585	1 000 000

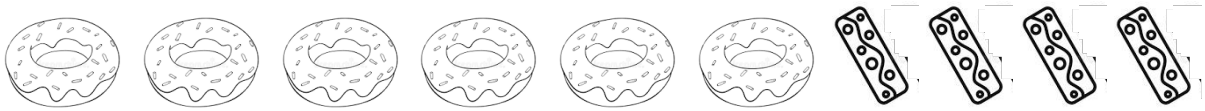
Total population of all 4 countries rounded to the nearest million = 10 000 000

The estimate obtained by rounding is greater than the actual value because the population of Jamaica was rounded up to 3 million, Qatar was rounded up to 3 million, Gambia and T&T combined were rounded up to 4 million. The total will therefore be greater than the actual as all values were rounded up.

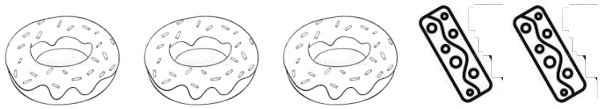
When we round up the estimate will be greater than the actual value.

(2 marks)

25. Carmen and Maxine together bought 6 doughnuts and 4 candy bars for $12+$14 =$26.



Therefore 3 doughnuts and 2 candy bars will cost $\$26 \div 2 = \$13$



For three times this amount which is 9 doughnuts and 6 candy bars, Zena will pay $13 x 3 = $39

Answer: $39

(3 marks)

26. Cost of the mangoes = $4 x 160 = $640

Number unfit for sale = 5% of 160 = $\frac{5}{100}$ x 160 = 8

So, the number of remaining mangoes to be sold = 160 - 8 = 152

Selling price of 152 mangoes at $6 each = 152 x $6 = $ 912

Profit made = Selling price – Cost price = $912 - $640 = $ 272

Jan's overall profit was $\frac{272}{640}$ x 100 = 42.5%

Jan's profit exceeded the desired profit of 40% by 2.55%

Answer: Yes, Jan succeeded.

(3 marks)

27. Number of students x \$2 + \$4 = Cost of present

Number of students x \$3 - \$4 = Cost of present

Let the number of students be represented by ☐

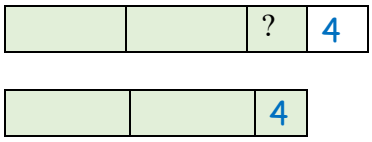
So, 3 x ☐ - 4 = 2 x ☐ + 4

3 x ☐ - 4 + 4 = 2 x ☐ + 4 + 4

Therefore, 3 ☐ = 2 x ☐ + 8

1 x ☐ = 8

OR



? = 4 and

Cost of the present = \$2 x 8 + 4 OR \$3 x 8 – 4 = \$20

Answer: \$20

(3 marks)

28. White buttons = $\frac{2}{5} = \frac{8}{20}$ Red buttons = $\frac{7}{20}$

Difference between white and red buttons = $\frac{8}{20} - \frac{7}{20} = \frac{1}{20}$

Hence $\frac{1}{20}$ of all the buttons = 6

Fraction that is black buttons = $1 - (\frac{8}{20} + \frac{7}{20}) = \frac{5}{20} = 5 \times \frac{1}{20}$ of the buttons

Hence, the number of black buttons = 5 x 6 = 30

Answer: 30 black buttons

(3 marks)

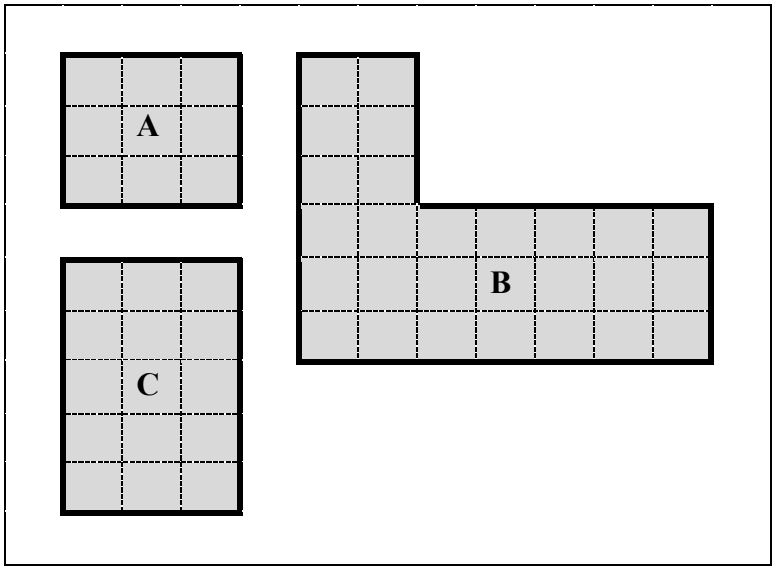
29. Length of room = 7.5 m x 100 = 750 cm

Width of room = 4.5 m x 100 = 450 cm
Area to be covered with tiles = 750 x 450 cm^2
Area of one square tile = 30 cm x 30 cm = 900 cm^2
Number of tiles required = Area of the room ÷ Area of 1 tile
= (750 x 450) ÷ 900 = 375

Answer: 375 tiles

(2 marks)

30.



Area of A = 3 x 3 = 9 square units
We cut B into two rectangles to get Area = (3 x 7) + (2 x 3) = 27 square units
Area of C = 3 x 5 = 15 square units
Total area of all three shapes = 9 + 27 + 15 = 51 square units
The largest square number that is less than 51 is 7^2 = 49
Number of unit squares remaining = 51- 49 = 2

Answer: 2 unit squares

(2 marks)

31. We calculate the mass of each item as shown below.

Item	Mass	Quantity	Total mass
T-shirts	150 g	4	4 x 150 g = 600 g
Cosmetic Bag	1 kg 25 g	1	1 x 1 kg 25 g = 1kg 25 g
Packs of Biscuits	600 g	3	3 x 600 g = 1 kg 800 g
Books	0.6 kg	6	6 x 0.6 kg = 3kg 600g
Other items	5.2 kg	1	1 x 5.2 kg = 5kg 200 kg
Total			12kg 225 g

	kg	g
	0	600
	1	25
	1	800
	3	600
+	5	200
	10	2225

10 kg 2 225 g = 12kg 225 g

12kg 2225 g – 12 kg = 225g

Answer: No. Maria exceeds the maximum by 225 g

(3 marks)

32. Volume of the box = 45 x 36 x 30 cm^3

Volume of 1 000 cubes = 1 000 x 3 x 3 x 3 cm^3

Fraction of the box filled = $\frac{1000\ x\ 3\ x\ 3\ x\ 3}{45\ x\ 36\ x\ 30} = \frac{5}{9}$

Answer: $\frac{5}{9}$

(3 marks)

33.

Figure Number	Number of squares	Number of palette sticks
1	1 x 1 = 1	4
2	2 x 2 = 4	4 + 8 = 12
3	3 x 3 = 9	12 + 12 = 24
4	4 x 4 = 16	24 + 16 = 40

OR

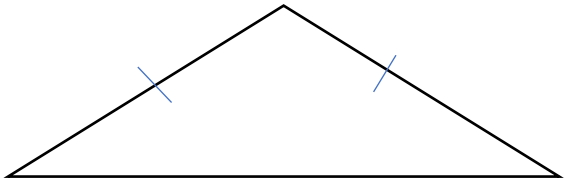
Figure Number	Number of squares	Number of palette sticks
1	$1^2 = 1$	1 x 4 = 4
2	$2^2 = 4$	3 x 4 = 12
3	$3^2 = 9$	6 x 4 = 24
4	$4^2 = 16$	10 x 4 = 40

OR

Figure Number	Number of squares	Number of palette sticks
1	$1^2 = 1$	2 x (1x2) = 4
2	$2^2 = 4$	2 x (2x3) = 12
3	$3^2 = 9$	2 x (3x4) = 24
4	$4^2 = 16$	2 x (4x5) = 40

(2 marks)

34.



Many such triangles can be drawn. One is shown above.

(2 marks)

35. Emily's mean mark = (81 +84 + 74 + 77) ÷ 4 = 316 ÷ 4 = 79

A silver medal is given for a mean of 70-79.

Answer: Emily gets a silver medal

(2 marks)

36. NLP – Decrease by 10%

$\frac{10}{100}$ x 5 650 = 565

Number of votes in 2024

= 5 650 – 565 = 5 085

DMP – Increase by 10%

$\frac{10}{100}$ x 4 660 = = 466

Number of votes in 2024

4 660 + 466 = 5 126

Answer: 5 126 > 5 085 so DPM has more votes in the year 2024

(3 marks)

SECTION 3 (16 marks)

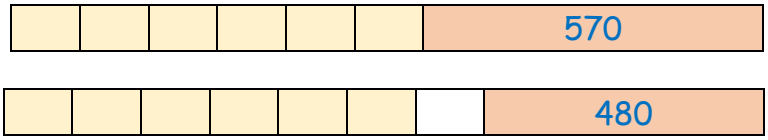
37.

Jalo's Shoe Shop Basic wage: $570 per week Plus $6 for each pair sold 	Harko's Shoe Shop Basic wage: $480 per week Plus $7 for each pair sold 

We know that both employees sold the same number of shoes. Let this unknown number be represented by $\square$

Nisa would receive $6 for each pair, so the total she received for the sale of $\square$ shoes is $6\times\square$. This is then added to her basic wage of $540.

Similarly, Jen would have received $7\times\square$ for the sale of shoes and $489 in basic wages. Both wages are equal as shown using two bar models that are equal in length.



So, $\square + 480 = 570$

$\square = 570 - 480 = 90$

Answer: 90 pairs of shoes

OR

Let the equal number of shoes sold by Nisa and Jen be $\square$

At Jalo's Shoe Shop, Nisa would have earned \$570 + (\$6 x $\square$)

At Harko's Shoe Shop, Jen would have earned \$480 + (\$7 x $\square$)

So, 480 + (7 x $\square$) = 570 +(6 x $\square$)

If we subtract 6 $\square$ from both sides of the equation, we will get

480 + (1 x $\square$) = 570

1 x $\square$ = 570 – 480 = 90

So, both Nisa and Jen sold 90 pairs of shoes

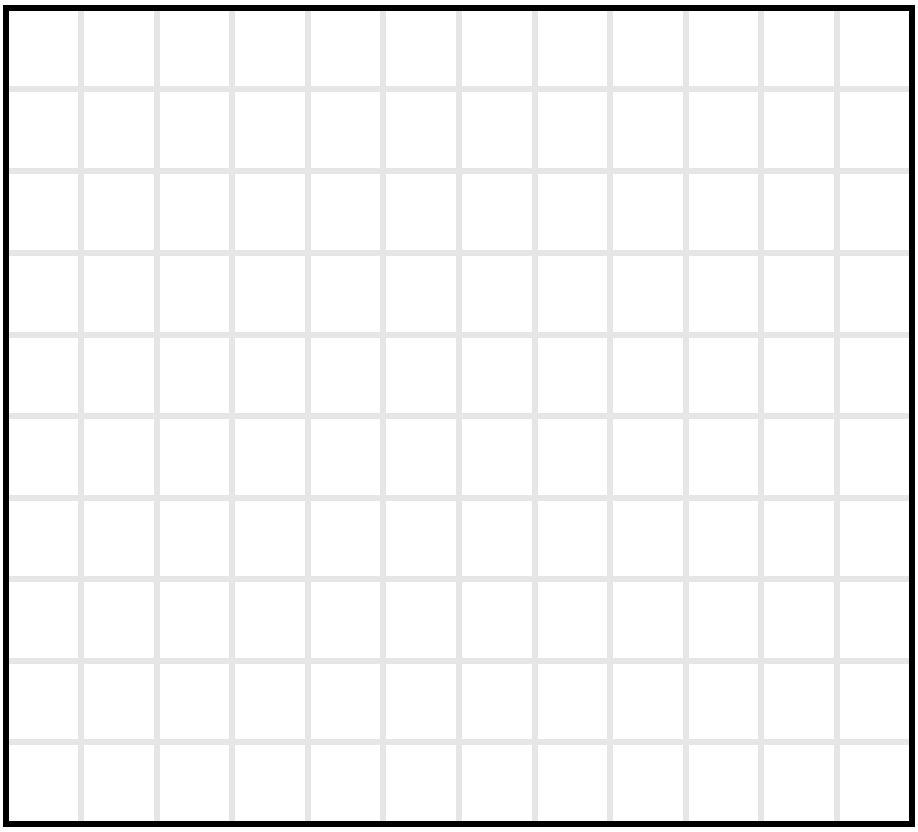
Answer: 90

(4 marks)

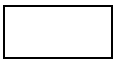
38.

12 km

10 km



We represent the above relationships by letting A's share be one unit.

A 

B  B is twice A

C  C is twice B

D  D is twice C

The total area is (12 x 10) km^2 = 120 km^2

Counting all the units, we have:

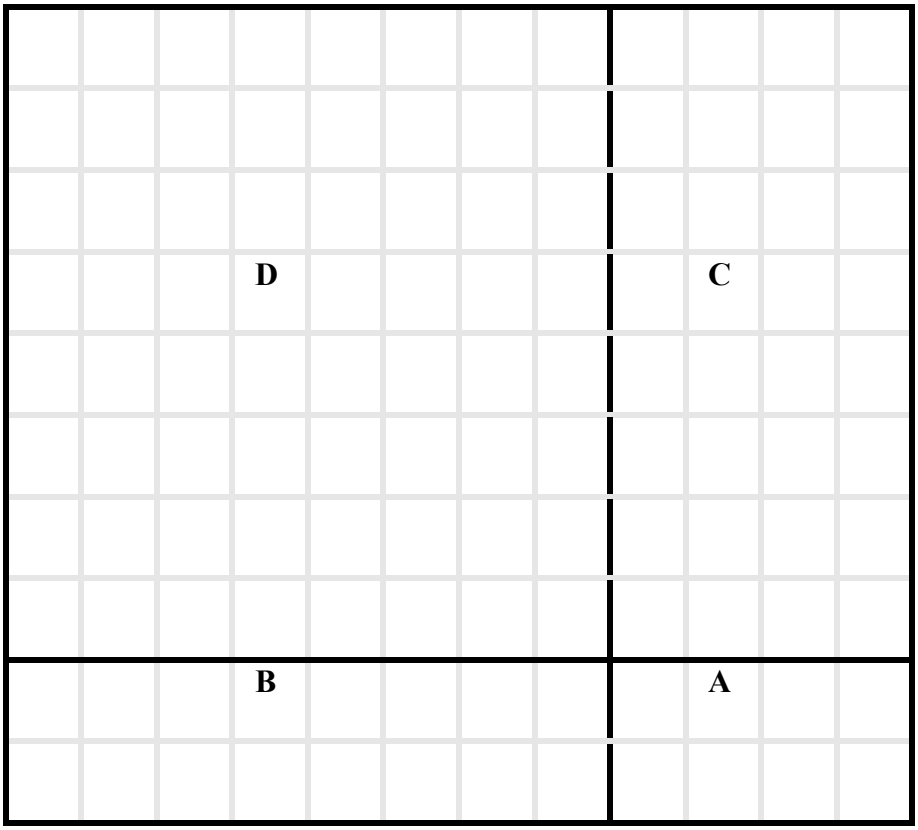
Area of (A + B + C + D) = 1 +2 + 4 + 8 = 15 units

Hence, 15 units = 120 km^2

1 unit = 120 km^2 ÷ 15 = 8 km^2

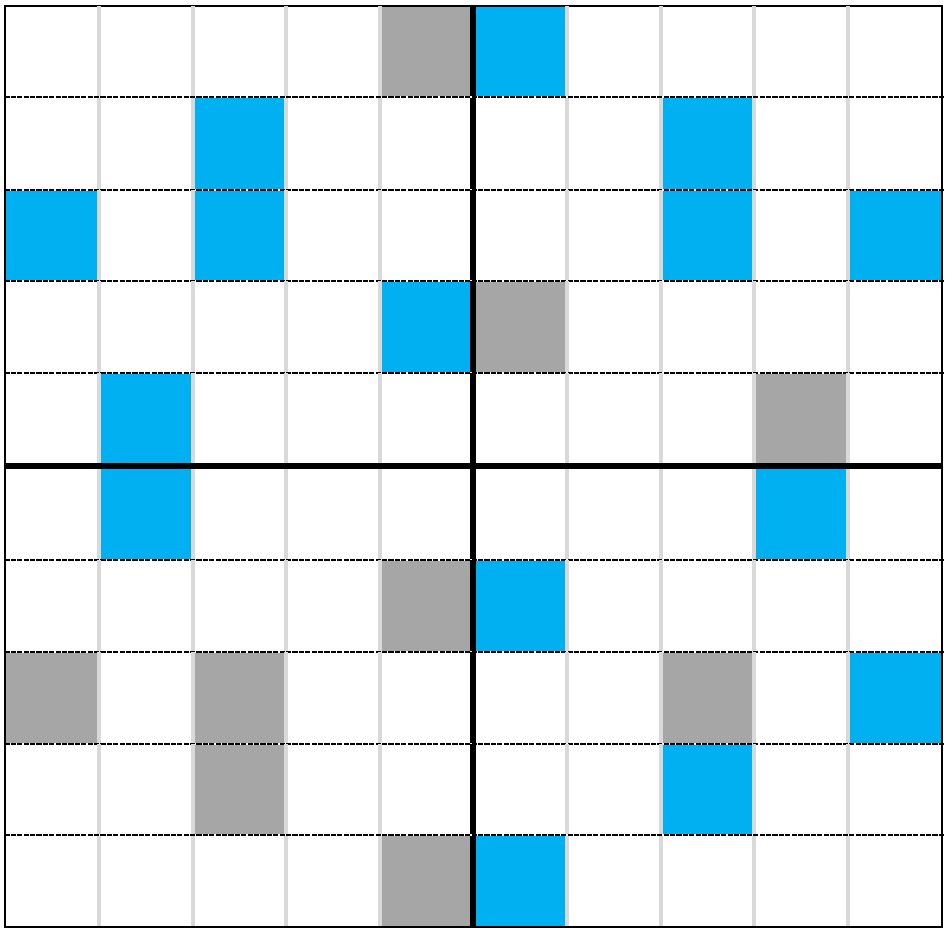
A = 1 unit = 8 km^2 B = 2 units = 16 km^2 C = 4 units = 32 km^2 D = 8 units = 64 km^2

Answer:



(4 marks)

39. The completed diagram has vertical and the horizontal lines of symmetry. The number of shaded squares is 15.



(4 marks)

40. All the toys in the three packages A, B and C, shown on the bar chart consist of

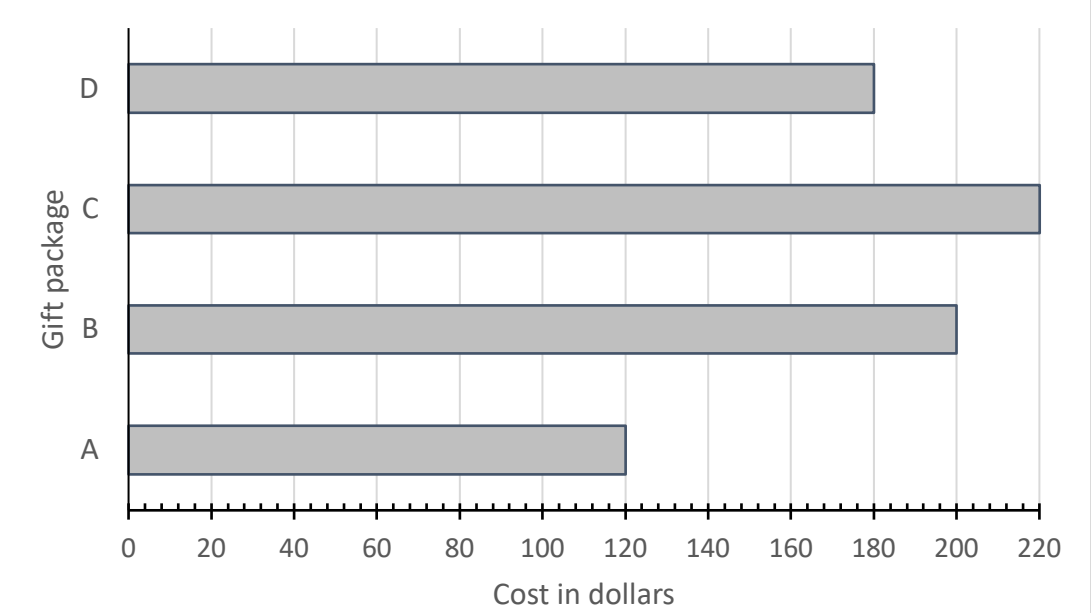
3 balls + 3 cars + 3 dolls.

The total cost of 3 balls + 3 cars + 3 dolls

= \$120 + \$200 + \$220 = \$540

Hence, the cost of 1 ball + 1 car + 1 doll will be $\$540 \div 3 = \$180$

The bar for package D represents \$180 as shown on the completed diagram.



(4 marks)

END OF TEST

FAS-PASS
Maths

PRACTICE TESTS FOR SEA MATHEMATICS

DETAILED SOLUTIONS

TEST BOOKLET 10

TEST CODE KA2510

AUTHORS

Dr SHEREEN A. KHAN & Dr FAYAD W. ALI

2025-2028 ASSESSMENT FRAMEWORK

SECTION 1(20 marks)

1. We represent the given number in expanded form on a Place Value Chart.

Thousands			Ones		
100 000	10 000	1 000	100	10	1
1	8	5	0	9	6

Answer: 185 096

2. $7^2 = 49$ $8^2 = 64$ $9^2 = 81$

And 64 lies between 50 and 70

The only square number between 50 and 70 is 64 which is 8^2

Answer: 64

3. We divide both the numerator and the denominator by 12 to get

$$\frac{24 \div 12}{60 \div 12} = \frac{2}{5}$$

Answer: $\frac{2}{5}$

4. $\frac{17}{10} = 1\frac{7}{10} = 1.7$

OR

Divide 17 by 10 by shifting the decimal point in the numerator one place to the left, thereby making it 1.7

Answer: 1.7

5.

$9 - 2\frac{5}{9} = 8\frac{9}{9} - 2\frac{5}{9}$ $\quad [\, 9 = 8 + 1 = 8 + \frac{9}{9} = 8\frac{9}{9} \,]$

$= 6\frac{4}{9}$

Answer: $6\frac{4}{9}$

6. 18% of 50 = $\frac{18}{100} \times 50 = 9$

So, 50 – 9 = 41 children do not wear spectacles.

OR

If 18 % wear spectacles then (100 – 18)% = 82% do not.

= $\frac{82}{100} \times 50 = 41$

Answer: 41

7. Each number in the pattern is obtained by dividing the previous number by 5

$50 \div 5 = 10$, $10 \div 5 = 2$, $2 \div 5 = \frac{2}{5}$ or 0.4

Answer: $\frac{2}{5}$ or 0.4

8. (A) $36 \times (14 + 6) = 36 \times 20$

(B) $(30 - 10) \times 36 = 20 \times 36 = 36 \times 20$

(C) $20 \times (20 + 16) = 20 \times 36 = 36 \times 20$

(D) $(20 + 14) \times 20 = 34 \times 20 \neq 36 \times 20$

Answer: D

9.

Try multiples of 10

20 booklets: 16 x 20 = 320

30 booklets: 16 x 30 = 480,

So 31 booklets will use 480 + 16 = 496 pages

So 31 complete booklets can be made.

OR Divide 500 ÷ 16 = 31 R 4

	H	T	O
		3	1
16	5	0	0
	4	8	0
		2	0
		1	6
			4

Answer: 31

10. We look at options and stop when we reach our target total.

Number buying pies	Number buying chocolate bars	Total cost
1	4	$3.33 + (4 x $ 6.33) = $28.65
2	3	(2 x $3.33) + (3 x $ 6.33) = $25.65
3	2	
4	1	

Answer: 3 children bought chocolate bars.

11. Counting backwards from April 4th to April 1st

April 4th Thursday, April 3rd Wednesday, April 2nd Tuesday, April 1st Monday

So March 31st will be a Sunday. We continue counting backwards.

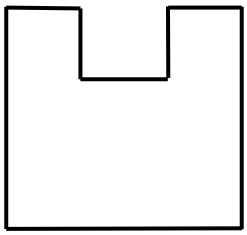
March 31st Sunday, March 30th Saturday, March 29th Friday, March 28th Thursday, March 27th. Wednesday, March 26th Tuesday

Answer: Tuesday

12. A teaspoon holds approximately 5 ml and millilitres is the appropriate metric unit for measuring capacity of small containers. However, we can accept cubic centimetres (cm^3) because capacity and volume are both measures of 3-dimensional regions.

Answer: ml or cm^3

13.



Area of shape = Area of the uncut square – area of the removed square
= (7 x 7) – (3 x 3) cm^2
= (49 – 9) cm^2
= 40 cm^2

Answer: 40 cm^2

14. Length of ribbon used to make the strips = (120 – 6.25) m = 113.75 m
Hence length of each strip = (113.75 ÷ 7) m = 16.25 m

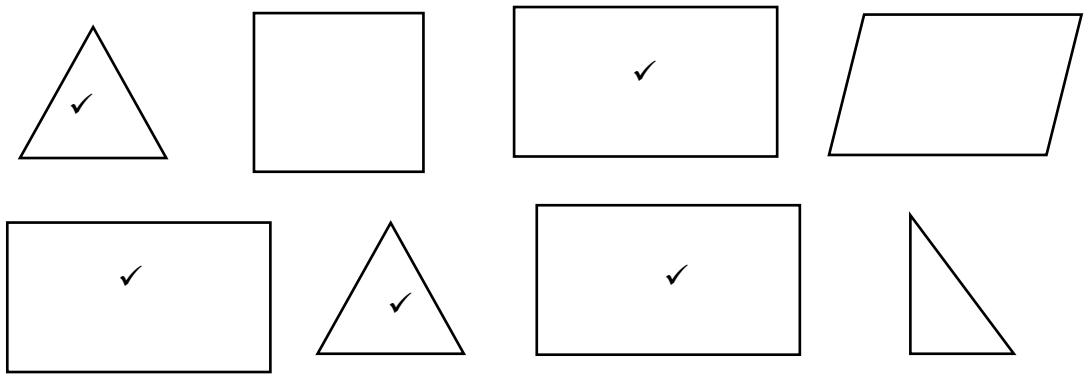
7	1	1	$^{4}3$	$^{1}7$	$^{3}5$
		1	6	2	5

Answer: 16.25 m

15. A regular polygon has all its sides equal. A triangle and a pentagon can possess this feature. Since a trapezium has only one pair of parallel sides then its four sides can never be all equal.

Answer: A - Trapezium

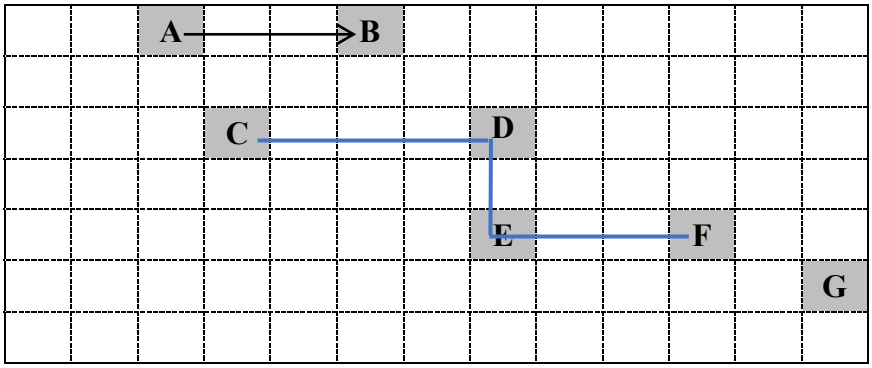
16. The shapes that make up the faces of solid.



Answer :

We shall have to tick 2 triangles for the opposite faces and 3 rectangles for the faces that join the two triangles.

17.



Answer: Two right-angle turns, C to D to E and D to E to F

18. Since the increase is the same 6 for all three numbers then the mean will increase by 6 to 18 + 6 = 24

OR

The original total of all three numbers = 18 x 3 = 54

The total increase is 6 x 3 = 18

New total = 54 + 18 = 72

New mean = 72 ÷ 3 = 24

Answer: 24

19. Total number of girls in the choir = 6 + 4 + 9 + 6 + 4 = 29

Number of boys who joined = 2 x 5 = 10

Total number of students in the choir = 29 + 10 = 39

Answer: 39

20.

	Red	Yellow	Orange
Number of skittles	24	22	

If the mode is orange, what is the least number of skittles in the pack?

If the mode is orange, then the number of orange skittles is at least 25

Hence, the least number of skittles = 24 + 22 + 25 = 71

Answer: 71

SECTION 2 (39 marks)

21. We convert all fractions to an equivalent form using 300 as the denominator.

$$\frac{1}{3} \times \frac{100}{100} = \frac{100}{300}$$

$$\frac{3}{10} \times \frac{30}{30} = \frac{90}{300}$$

$$\frac{33}{100} \times \frac{3}{3} = \frac{99}{300}$$

$$90 < 99 < 100$$

Therefore the fractions arranged in ascending order will be: $\frac{3}{10}, \frac{33}{100}, \frac{1}{3}$

Answer: $\frac{3}{10}, \frac{33}{100}, \frac{1}{3}$

(2 marks)

22.

A1, F6, K11, P16, _____, Z26

First, consider the letters A, F, K, P
From A to F, F to K and from K to P we counted 5 letters in order. So, from P we count 5 letters to get U.

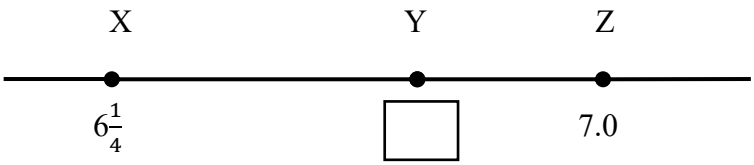
Next, consider the numbers
From 1 to 6, 6 to 11, 11 to 16 we counted 5 numbers. So, from 16 we count 5 numbers to get 21.

The missing term in the pattern is U21
(If we counted 5 letters from U and 5 numbers from 21, we would see that the last term is Z26 as stated.)

Answer: U21

(2 marks)

23.



From X to Z = 7.0 – 6 $\frac{1}{4}$ = $\frac{3}{4}$

$\frac{2}{3}$ x $\frac{3}{4}$ = $\frac{1}{2}$

So, the position of Y = 6 $\frac{1}{4}$ + $\frac{1}{2}$ = 6 $\frac{3}{4}$

Answer $6\frac{3}{4}$

(2 marks)

24. 299.7×0.09 is approximately equal to 300 x 0.1 = 30

So, Jonathan's estimate is correct.

It is likely Hafeez incorrectly approximated 0.09 to 1 and therefore got

300 x 1 = 300

Answer: Jonathan's estimate is better.

(2 marks)

25. We reverse the operations from the final result to get 6 + 2 = 8. Then, 8 x 4 = 32 and 32 – 3 = 29
We can check: 29 + 3 = 32, 32 ÷ 4 = 8 and 8 – 2 = 6

Answer: The numbers in the respective boxes would be 29…32…8

(3 marks)

26. The number of fishes caught by Aneil, Nathan and Jameel = 1 + 2 + 2 = 5
So, the number of fishes caught by Brandon and Tariq = 23 - 5 = 18
Brandon caught twice as many as Tariq
So, we divide 18 fishes into 3 sets ($18 \div 3 = 6$)
Brandon would have caught 2 sets = 6 x 2 = 12 and Tariq one set = 6 x 1 = 6

Answer: 6 fishes

(3 marks)

27. The odd multiples of 5 between 50 and 100 are 55, 65, 75, 85 and 95
95 - 12 = 83 which is NOT a multiple of 3
85 - 12 = 73 which is NOT a multiple of 3
75 - 12 = 63 which is 21 x 3 and is a multiple of 3
So, Jonas had 75 blocks

Answer: 75

(3 marks)

28.

	1050
42×10	− 420
	630
42×10	− 420
	210
42×5	− 210
	0

$1\,050 \div 42 = 10 + 10 + 5 = 25$

Answer: 25

(3 marks)

29.

Times when the digits total 9 are: 5:04, 5: 13, 5:22, 5:31 and 5:40.
So, there are 5 members of the Sandiford family.

Answer: 5

(2 marks)

30. Area of square = (10 x 10) cm^2

The area of the four regions (two shaded and two unshaded)
= $100 - 78\frac{4}{7} = 99\frac{7}{7} - 78\frac{4}{7} = 21\frac{3}{7}$ cm^2

So, the area of the two shaded regions in cm^2 = $21\frac{3}{7} \div 2 = \left(\frac{150}{7} \times \frac{1}{2}\right) = \frac{75}{7} = 10\frac{5}{7}$

Answer $10\frac{5}{7}$ cm^2

(2 marks)

31. The amount of water poured in each cup:

Cup 1 = $\frac{3}{4}$ (400) ml Cup 2 = $\frac{1}{2}$ (400) ml Cup 3 = $\frac{1}{4}$ (400) ml

Total volume of water poured in 3 cups = 300 + 200 + 100 = 600 ml
Remaining water in the bottle = 750 – 600 = 150 ml

Capacity of fourth cup = 400 ml
The fraction of a bottle that can be filled with the remainder = $\frac{150}{400}$
The fraction reduces to $\frac{3}{8}$

Answer: $\frac{3}{8}$

(3 marks)

32. Total baking time: 8:32 to 10:01 = 1 hour 29 mins

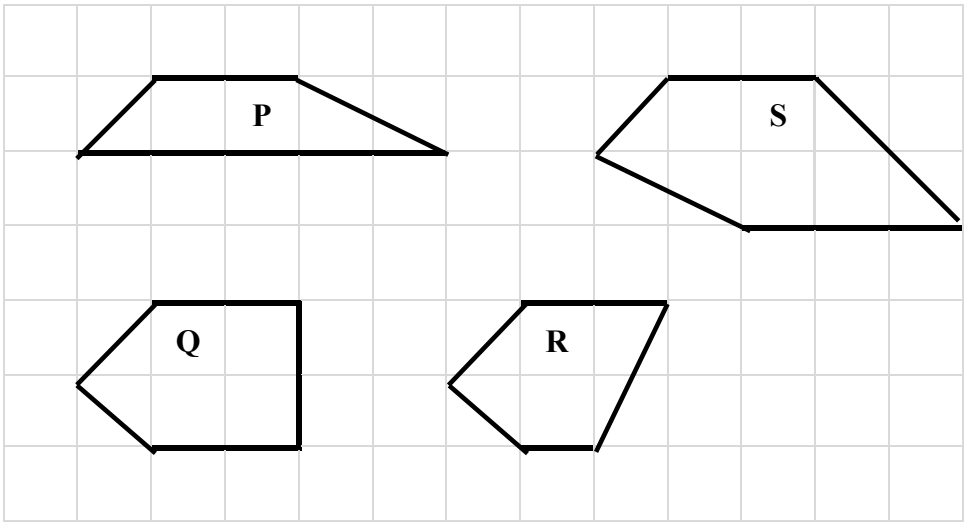
Total baking time for a turkey in minutes = 89
89 = 33 + (8 x Number of kilograms)
8 x Number of kilograms = (89 – 33) minutes
8 x Number of kilograms = 56 minutes
Therefore, the weight of the turkey = 56 ÷ 8 = 7 kg

	Hours	Minutes
	9	61
	10	~~01~~
–	~~8~~	32
	1	29

Answer: 7 kg

(3 marks)

33.



Both Q and R have one pair of parallel sides but each has 2 equal sides.
P and S both have one pair of parallel sides and no equal sides

Answer: P and S

(2 marks)

34. Similarity: Both have six faces or both have 12 edges.

Difference: The cuboid has a uniform cross-section and the other shape does not

(2 marks)

35. Number of weekdays = 5

Total entry fee for 5 weekdays = \$3.50 x 5 = \$17.50

Saturday entry fee = \$5.75 x 1 = \$5.75

Sunday entry fee = \$6.50 x 1 = \$6.50

Total entry fee for all 7 days of the week = \$29.75

7	2	9	$^{1}7$	$^{3}5$
		4	2	5

Therefore, the mean entry fee = \$29.75 ÷ 7 = \$4.25

Answer: \$4.25

(2 marks)

36. Number of Lower Juniors = 15

Therefore, number of instructors required = 15 ÷ 5 = 3

Number of Juniors = 24

Therefore, number of instructors required = 24 ÷ 6 = 4

Number of Seniors = 40

Therefore, number of instructors required = 40 ÷ 8 = 5

Total number of instructors required = 3 + 4 + 5 = 12

Answer: 12

(3 marks)

SECTION 3 (16 marks)

37.

	Day 1		DAY 2	
	Item	**Cost**	**Item**	**Cost**
Meat	Chicken	$41.50	Duck	$52.95
Vegetable	Cauliflower	$19.25		
	Beans	$12.75	Beans	$12.75
Fruit	Watermelon	$26.10	Watermelon	$26.10
			Pineapple	$8.50
TOTAL		$99.60		$100.30

$99.60 is $100 when rounded to the nearest dollar

$100.30 is $100 when rounded to the nearest dollar.

(4 marks)

38. We first calculate her total cost of parking from Monday to Friday.

Day	Duration	Cost
Monday	4 hours	$6 + $4 x 3 = $18
Tuesday	1 hour 15 minutes	$6 + $4 x 1 = $10
Wednesday	8 hours	Daily rate = $25
Thursday	4 hours 5 minutes	$6 + $4 x 4 =$22
Total		$75

Cost for parking from Monday to Friday = $89.

So, cost of parking on Friday = $89 – $75 = $14

For $14 the cost would have been 1st hour $6 and 2 hours at $4 each. Hence she parked for a total of 3 hours on Friday.

So, the latest time that Priya would have left on Friday is 3 hours later than 9:15 am = 12:15 pm

Answer: 12:15 pm

(4 marks)

39. (a) The fifth figure in the pattern.

The fifth figure would have 4 squares with two identical triangles. One atop and one below, the base of each triangle being the same as the side of the square.

(b)

Pattern Number	Number of sticks
1	5
2	8
3	11
4	
5	
10	

Number of sticks = 5, 8, 11…

The number increases by 3 for every new figure.

So, for Figure 4 it will be 11 + 3 = 14 and

Figure 5 it will be 14 + 3 = 17

By further counting, we will get:
Fig 6 to have 17 + 3 = 20,
Fig 7 to have 20 + 3 = 23,
Fig 8 to have 23 + 3 = 26,
Fig 9 to have 26 + 3 = 29 and
Figure 10 to have 29 + 3 = 32

OR
The number of sticks is (Figure number x 3) + 2
So, for Figure 4 it will be 4 x 3 + 2 = 14,
Figure 5 it will be 5 x 3 + 2 = 17 and for
Figure 10 it will be 10 x 3 + 2 = 32

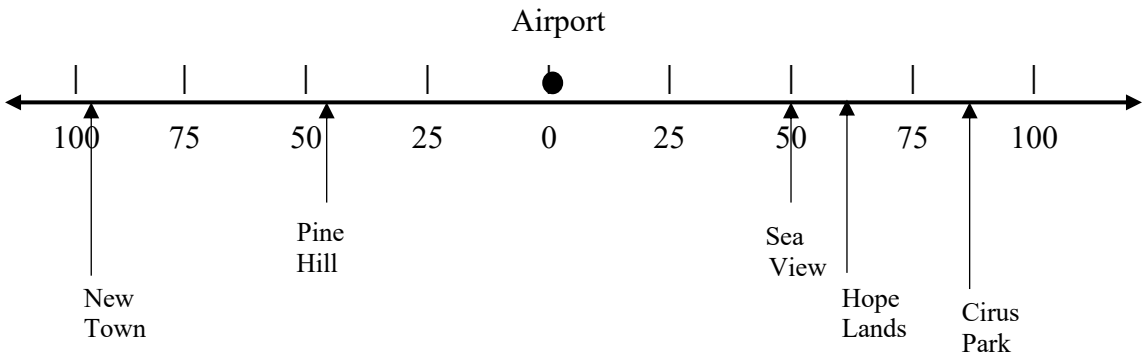
The completed part of the table is shown

Pattern Number	Number of sticks
4	14
5	17
10	32

(4 marks)

40. Location of all five towns

(a)



(b) The shortest distance between any two towns.

The shortest distance is between Sea View and Hope Lands

= (65–50) km =15 km

(c) The longest distance between any two towns.

The longest distance is between New Town and Sirus Park

= (90 + 85) km = 175 km

(4 marks)

END OF TEST

FAS-PASS
Maths

PRACTICE TESTS FOR SEA MATHEMATICS

DETAILED SOLUTIONS

TEST BOOKLET 11

TEST CODE KA2511

AUTHORS

Dr SHEREEN A. KHAN & Dr FAYAD W. ALI

2025-2028 ASSESSMENT FRAMEWORK

SECTION 1 (20 marks)

1. We represent the given number in expanded form on a Place Value Chart.

Thousands			Ones		
100 000	10 000	1 000	100	10	1
6	0	2	0	3	8

This is six hundred and two thousand and thirty-eight OR 602 038

Answer: 602 038

2.

6	5	8	3

Place values increase as we move from the right to left of a Place Value Chart so the largest possible number will have 8 as its first digit. Since the number must be even, the ending digit must be even, then 6 will be in the last position. The remaining digits are 5 and 3. Since 5 > 3, 5 is placed as the second digit and to the left of 3.
The largest even number is therefore 8 536

Answer: 8 536

3. $\frac{4}{1} + \frac{3}{10} + \frac{9}{100}$

$= 4 \times 1 + 3 \times \frac{1}{10} + 9 \times \frac{1}{100}$

Ones	Tenths	Hundredths
1	$\frac{1}{10}$	$\frac{1}{100}$
4	3	9

Answer: 4.39

4. Each number was obtained from the previous one by dividing by 3
$27 \div 3 = 9$, $9 \div 3 = 3$, $3 \div 3 = 1$. So, the next number in the pattern is $1 \div 3 = \frac{1}{3}$

Answer: $\frac{1}{3}$

5. $4\,500 = 100 \times 45$
So, there are 45 hundreds in 4 500

OR $\frac{4\,500}{100} = 45$

Answer: 45 hundreds

6. The circle is divided into 10 equal parts

If $\frac{2}{5}$ is to be shaded then we must shade $\frac{2}{5} \times 10$ parts = 4 parts
However, 6 parts are shaded so we must un-shade 6-4 = 2 parts

Answer: 2

7. 504 crayons are to be shared equally among 36 students.
Each student will receive $\frac{504}{36}$ crayons

Dividing both the numerator and denominator by 12 we reduce the fraction to get $\frac{42}{3}$ which further reduces to 14.

Answer: 14 crayons

8. Cost for 30 students at \$28 each = \$28 x 30 = \$ 840
Cost for the bus = \$350
Total cost = \$840 + \$350 = \$ 1 190

Answer: \$ 1 190

9. In the first row, we know that a number multiplied by itself 3 times = 64

4 x 4 x 4 = 64, so ★ = 4

In the second row, we replace the star by 4 to obtain: 4 + 2 x ✚ = 16

If 2 x a number plus 4 = 16 then , 2 x ✚ = 16 – 4 = 12. Hence, ✚ = 12 ÷ 2 = 6

Answer: ✚ = 6

10.

The sum of Liam's number and Miriam's number is 75. Since Liam is ahead of Miriam he has the smaller number, 37 and Miriam's number is 37 + 1 = 38. Nico is standing behind Miriam and his number will therefore be 38 + 1 = 39

Answer: 39

11. Mass of all 6 toys = 3.3 kg = 3.3 x 1 000 = 3 300 g
Hence the mass of 1 toy = 3 330 ÷ 6 = 550 g

Answer: 550 g

	Th	H	T	O
6	3	3	$^{3}0$	0
		5	5	0

12. The bus leaves San Fernando at 8: 14 am and took 32 minutes to reach Chaguanas.
So, the arrival time at Chaguanas was 8: 14 + 0 :32 = 8:46 am

The bus spends 13 minutes in Chaguanas.
So, the bus left Chaguanas at 8:46 + 0:13 = 8:59 am
The journey back to San Fernando is the same 32 minutes, so the bus arrived at San Fernando at 8:59 + 32 = 9:31 am which is after 9:30 am

Answer: No, The bus did not arrive before 9:30

13. 3.62 km = 3 km 620 m

Distance walked by Kerry = 5 km 700 m + 3 km 620 m

= 9 km 320 m = 9.32 km

Answer: 9.32 km

km	m
1 5	700
3	620
9	320

+

1320 km = 1 km 320 m

14. Volume of the smaller cube = 4 x 4 x 4 = 64 cm^3

Therefore, the volume of the larger cube = 280 – 64 = 216 cm^3

A number multiplied by itself 3 times is equal to 216.

We deduce that 6 x 6 x 6 = 216

So, the length of the larger cube = 6 cm

Answer: 6 cm

15. From 9 am to 12 noon there are 3 hours and every hour Lal makes a quarter turn.

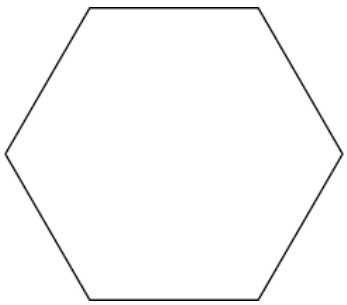
After the first hour, Lal turns from N by $\frac{3}{4}$ of a turn to face West.
After the second hour, Lal will turn from W by $\frac{3}{4}$ of a turn to face South.
After the third hour, Lal will turn from S by $\frac{3}{4}$ of a turn to face East.
OR
Lal will make a total of $\frac{3}{4} \times 3 = 2\frac{1}{4}$ turns.
Each complete turn will return Lal to his original position of North. So, at noon, Lal would have made two complete turns and a further $\frac{1}{4}$ turn clockwise, thus facing East.

Answer: East

16. The large cube will be composed of 4 x 4x 4 = 64 smaller cubes.
Terrance requires 12 more cubes to complete the large cube of side 4 units.
Terrance has already used 64 – 12 = 52 cubes.
The fraction of the large cube completed is $\frac{52}{64}$ which reduces to $\frac{13}{16}$.

Answer: $\frac{13}{16}$

17.



Answer: The shape of the cross-section is a regular hexagon

18. The total mark in Boyo's first two subjects = 80 x 2 = 160

The mean mark in the three subjects is 2 marks less than 80 = 78

The total mark in the three subjects = 78 x 3 = 234

So, Boyo's third mark = Total mark in all 3 subjects – the total mark in the first two subjects
=234 – 160 = 74

Answer: 74

19. Total number of students that entered the competition = 2 + 3 + 4 + 5 + 10 + 6 = 30

A score of 80 % = $\frac{80}{100}$ x 5 = 4
So, a score of 4 or 5 would be 80% or more.
The number who scored 4 or 5 = 10 + 36 = 16
The fraction of students who score 80% or more = $\frac{16}{30}$
This reduces to $\frac{8}{15}$

Answer: $\frac{8}{15}$

20. In the bar graph, 20 litres of blue paint are shown by 4 equal units.
Hence, 1 unit represents 20 ÷ 4 = 5 litres
Based on the number of units of paint shown on the chart,

Amount of green paint = 2 x 5 litres = 10 litres
Amount of red paint = 6 x 5 litres = 30 litres
Amount of yellow paint = 5 x 5 litres = 25 litres
Amount of blue paint was given as = 20 litres

Amount of paint bought in all = 85 litres

Answer: 85 litres

SECTION 2 (39 marks)

21. We can use one-half as a benchmark to compare the fractions.

$$\frac{3}{7} < \frac{1}{2}$$

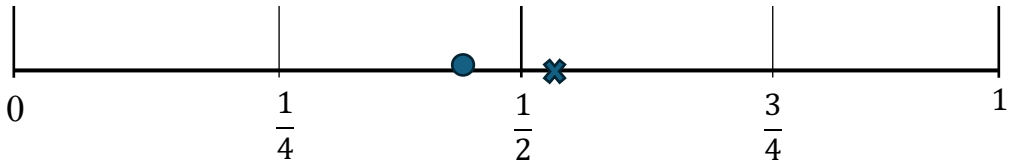
This is because $\frac{6}{14} < \frac{7}{14}$. So, we place a dot to the left of $\frac{1}{2}$ to represent $\frac{3}{7}$.

We note than

$$\frac{5}{9} > \frac{1}{2}$$

This is because $\frac{10}{18} > \frac{9}{18}$. So, we place an X to the right of $\frac{1}{2}$ to represent $\frac{5}{9}$.

Answer:



(2 marks)

22. We could look at the pattern of the numerators: 1, 3 + 4, 6 + 7 + 8 and deduce that the next numerator will be 10 + 11 + 12 + 13
Now, we look at the pattern of the denominator: 2, 2+3 = 5, 5 + 4 = 9 and deduce that the next denominator will be 9 + 5 = 14

Answer: $\frac{10+11+12+13}{14}$

(2 marks)

23. Each hen lays 2 eggs every 3 days

In the month of September, there are 30 days or 10 sets of 3 days.
So, each hen will lay 10 sets of 2 eggs = 20 eggs
18 hens will lay 20 x 18 = 360 eggs

Answer: 360 eggs

(2 marks)

24. The amount of money spent on Shirts and sandals = $500 – $95 = $405
To obtain a total of $405 means the number of shirts must be an odd number.
The table below lists options.

Number of shirts	Number of sandals	Total
1	1	$75 + $90 = $165
3	1	$75 x 3 + $90 x 1 = $315
3	2	$75 x 3 + $90 x 2 = $405

We need not continue. So, Novak bought 3 shirts

Answer: 3 shirts

(2 marks)

25. Number of hours Ronald worked per week = 8 x 5 = 40
At $45 per hour, Ronal's basic weekly wage = $45 x 40 = $1 800

If Ronald's wage was $1 980 then the overtime pay for that week would have been

= $1 980 - $ 1 800 = $180

At $60 per hour for overtime pay, Ronald worked for 180 ÷ 60 = 3 hours

Answer: 3 hours

(3 marks)

26. 4 dresses and 3 pairs of pants cost $260

3 dresses and 4 pairs of pants cost $230

Adding both sets we get

7 dresses and 7 pairs of pants cost $260 + $230 = $490

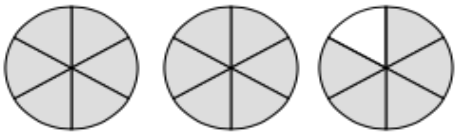
If we now divide by 7 we shall get 1 dress and 1 pair of pants cost $490 ÷ 7 = $70

So, 5 dresses and 5 pairs of pants will cost $70 x 5 = $350

Answer: $350

(3 marks)

27. Lilly's answer of $\frac{16}{6}$ is equivalent to $2\frac{4}{6}$ instead of $2\frac{5}{6}$. Hence, it is incorrect. Each whole had 6 sixths so there are 6 x 2 =12 sixths in 2 wholes, and this must be added to 5 sixths to get 17 sixths.



$$\frac{6}{6}+\frac{6}{6}+\frac{5}{6}=\frac{17}{6}$$

The correct procedure is [(6 × 2) + 5] ÷ 6 = $\frac{17}{6}$. So, it appears that Lilly interchanged the 5 and the 6 and used an incorrect procedure.

(3 marks)

28. We represent the number of chickens on Sunday by a bar with 8 units – this will make it easier to find halves and quarters.

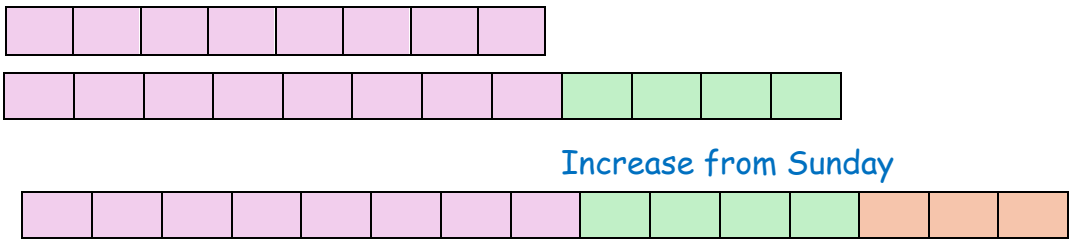
Sunday

Monday

Increase from Sunday

Tuesday

Increase from Monday



15 units = 1275

1 unit = 1275 ÷ 15 = 85

Number of chickens on Sunday = 85 x 8 = 680

$$\frac{1275}{15}=\frac{255}{3}=\frac{85}{1}$$

OR

Let us say that the number of chickens was $\square$

Then on Monday, the number was $\square + \frac{1}{2}\square = 1\frac{1}{2}\square$

On Tuesday it was $1\frac{1}{2}\square + \frac{1}{4}(1\frac{1}{2}\square) = 1\frac{1}{2}\square + \frac{3}{8}\square = 1\frac{7}{8}\square$

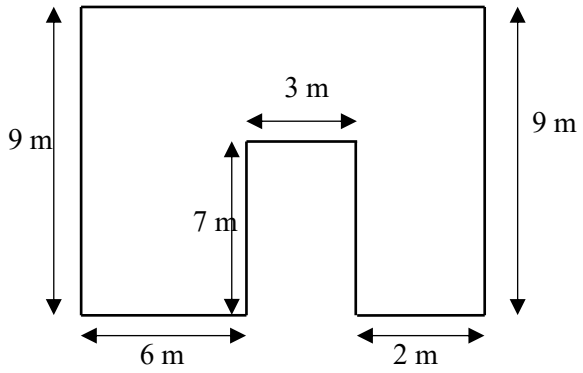
So, $1\frac{7}{8}\square = 1\,275$

$\square = 1\,275 \div 1\frac{7}{8} = 1\,275 \times \frac{8}{15} = 680$

Answer: 680 chickens

(3 marks)

29.



We can consider the shape as a 9m by 11m rectangle from which a smaller rectangle 3m by 7m was removed.

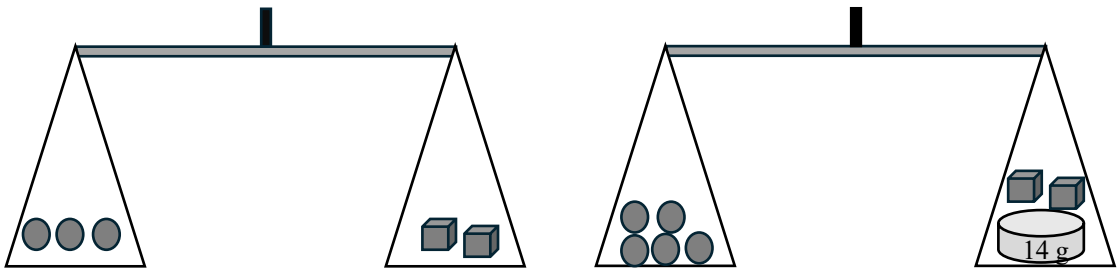
To calculate the area of the shape, we calculate the area of the larger rectangle and then subtract the area of the smaller rectangle.

Length of larger rectangular = (6 + 3 + 2) m = 11 m
Width of larger rectangle = 9 m
Area of the larger rectangle = (11 x 9) m^2 = 99 m^2
Area of smaller rectangle = (7 x 3) m^2 = 21 m^2
Area of shape = (99 – 21) m^2 = 78 m^2

Answer: 78 m^2

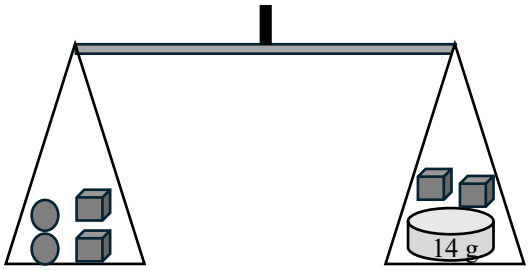
(2 marks)

30.



Looking at the diagram on the left, we note that 3 balls weigh the same as 2 cubes.

Looking at the diagram on the right, we can replace 3 of the balls by 2 cubes



If we now remove 2 cubes from each scale pan, we shall have 2 balls on the left equal in mass to 14 g. Hence, 1 ball has a mass of 14 ÷ 2 = 7 g.

Therefore, 3 balls have a mass of 21 g
But 3 balls are equal in mass to 2 cubes
So, 2 cubes have a mass of 21 g and 1 cube will have a mass of $21 \div 2 = 10\frac{1}{2}$ g

Answer:
Mass of one cube: 10 ½ grams
Mass of one ball: 7 grams

(2 marks)

31. Volume of the tank = (1 x 0.8 x 0.6) m^3 = 0.48 m^3

= 0.48 x 1 000 = 480 litres
At 12 litres per minute, the tank will be filled in 480 ÷ 12 = 40 minutes.
So, the tank will be filled at 9:12 + 40 = 9:52 am

Answer: 9;52 am

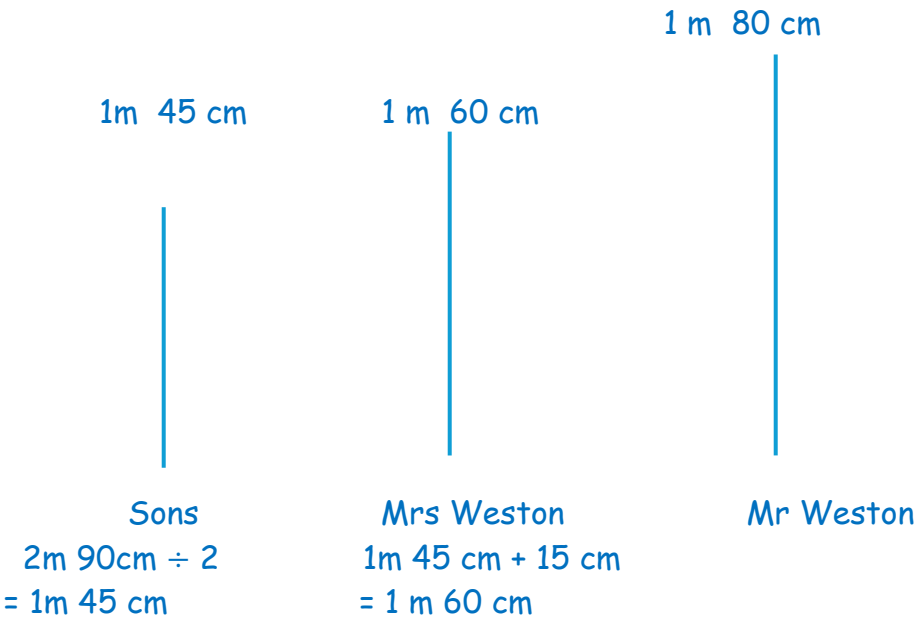
(3 marks)

32. Height of each twin = 2.9 m ÷ 2 = 1.45 m or 1 m 45 cm

Hence, Mrs, Weston is 1 m 45 cm + 15 cm = 1 m 60 cm tall

Mrs Weston is therefore 1 m 80 cm – 1 m 60 cm = 20 cm shorter than Mr Weston

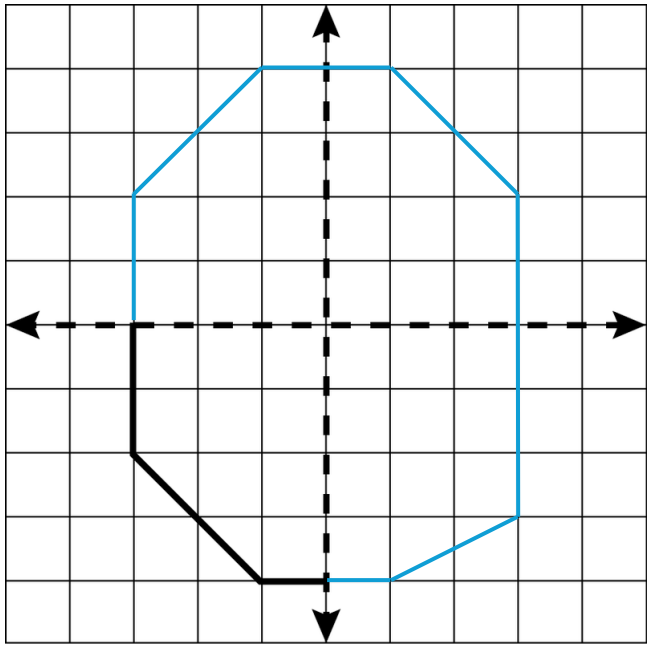
OR



Answer: 20 cm

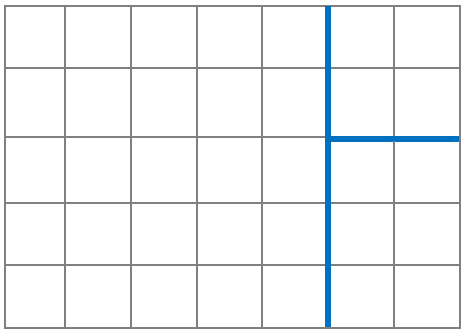
(3 marks)

33.



(2 marks)

34. Diagram showing two squares of different sizes and a rectangle.



(2 marks)

35.

	Cricket	Football	Total
Boys	41	95 – 41 = 54	95
Girls	69 – 41 = 28	27	27 + 28 = 55
Total	69	54 + 27 = 81	95 + 55 =150

Percentage who play football = $\frac{81}{150}$ x 100 % = 54%

Answer: 54

(3 marks)

36. Number of eggs collected in week 1 and week 2 = 160 + 170 = 330

No of dozens = 330 ÷ 12 = $27\frac{1}{2}$

Selling price of $27\frac{1}{2}$ dozen eggs at \$28 per dozen

= \$28 x 27 + \$28 x $\frac{1}{2}$ = \$756 + \$14 = \$ 770

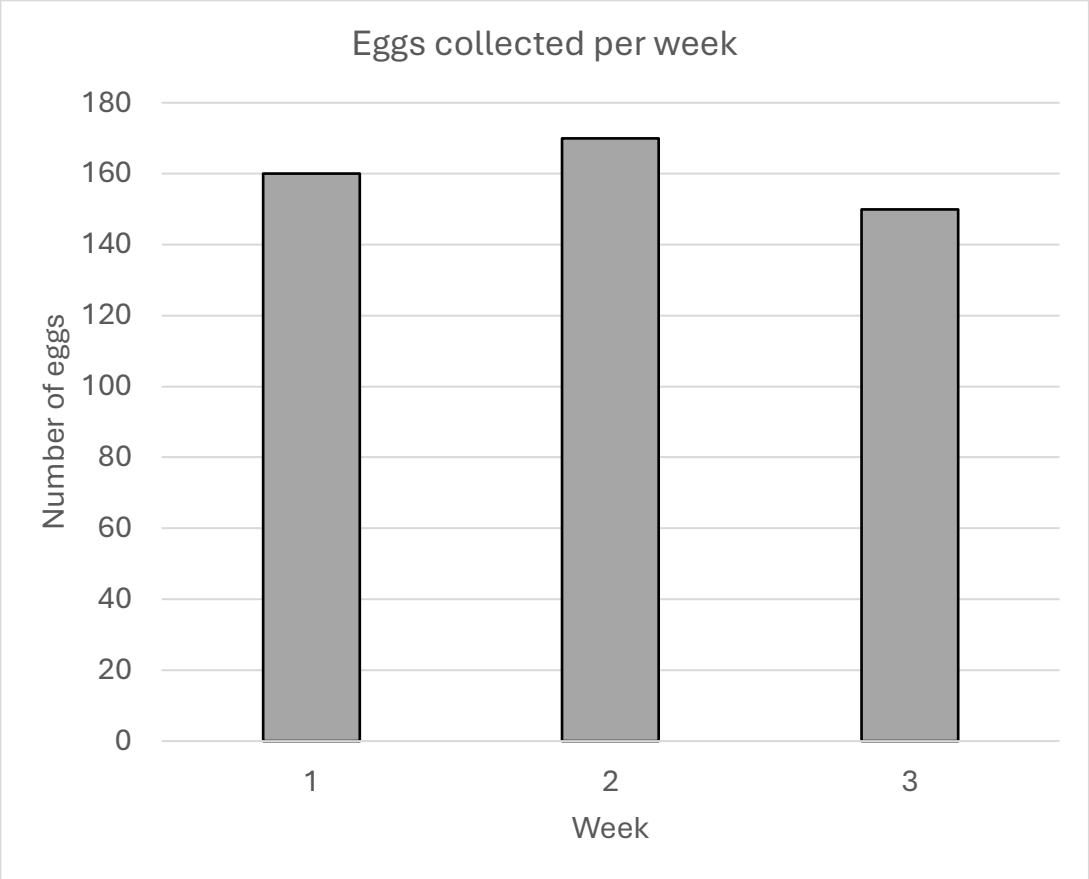
Hence, sales for the 3rd week = \$1 120 - \$770 = \$350

Number of dozen eggs sold in the 3rd week = 350 ÷ 28 = $12\frac{1}{2}$

= $12\frac{1}{2}$ x 12 = 150 eggs

The third bar is therefore drawn to a height of 150.

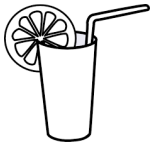
Answer:



(3 marks)

SECTION 3 (16 marks)

37.



Orange juice
$4.75

Apple pie
$6.60

Cupcake

$8.50

Fruit bowl
$9.50

Sharlene's order: After buying the orange juice, she has $15.25 left to buy 2 items, she must buy the apple pie and the cupcake. Her total will be $19.85.

Name	Orange Juice	Cupcake	Apple Pie	Fruit bowl	Total
Sharlene	$4.75	$8.50	$6.60		$19.85
Jessica	$4.75	$8.50		$9.50	$22.75
Miranda	$4.75		$6.60	$9.50	$20.85

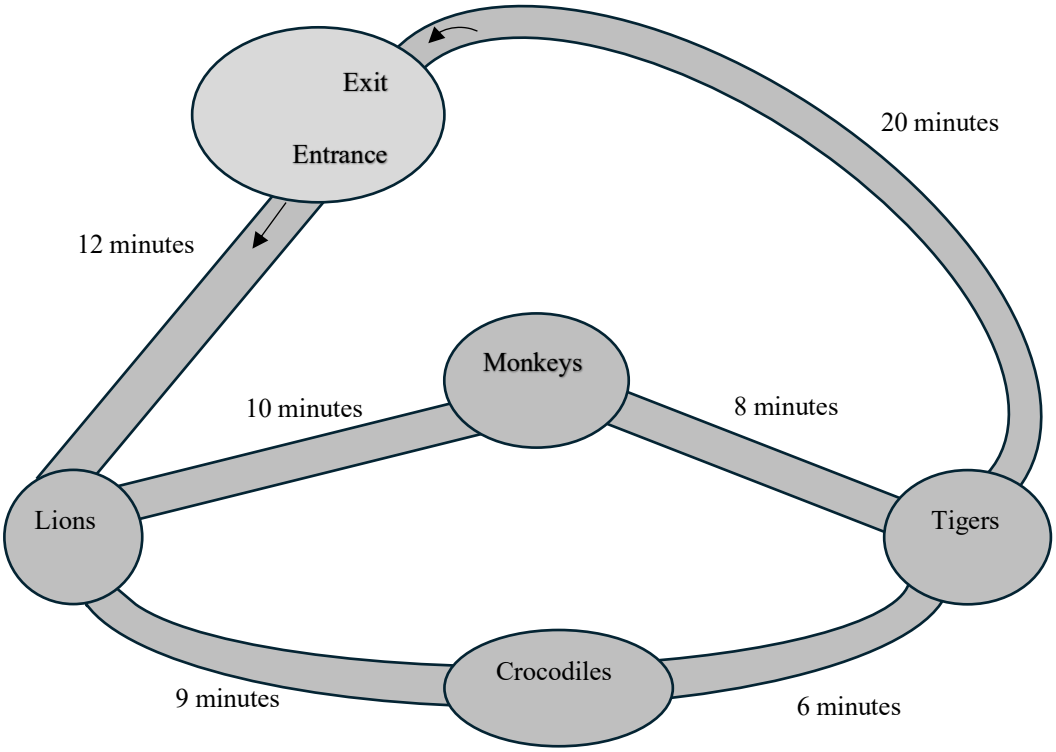
Jessica's order: Since she spent the most money, she chose the fruit bowl and the cupcake – these are the more expensive items.

Miranda's order: Since all girls had different orders, Miranda would have choosen the fruit bowl and the apple pie.

Answer: Miranda's order was one orange juice, one apple pie, and one fruit bowl which totals $20.85

(4 marks)

38.



Joey has from 10:00 to 11:42 or 102 minutes to complete his visits. He spends a total of 10 x 4 = 40 minutes at each enclosure. Therefore his time spent walking must be (102 – 40) minutes = 62 minutes. He has two possible routes.

I: Entrance ➞ Lions ➞ Crocodiles ➞ Tigers ➞ Monkeys ➞ Tigers ➞ Exit
Walking Time in minutes = 12 + 9 + 6 + 8 + 8 + 20 = 63 minutes

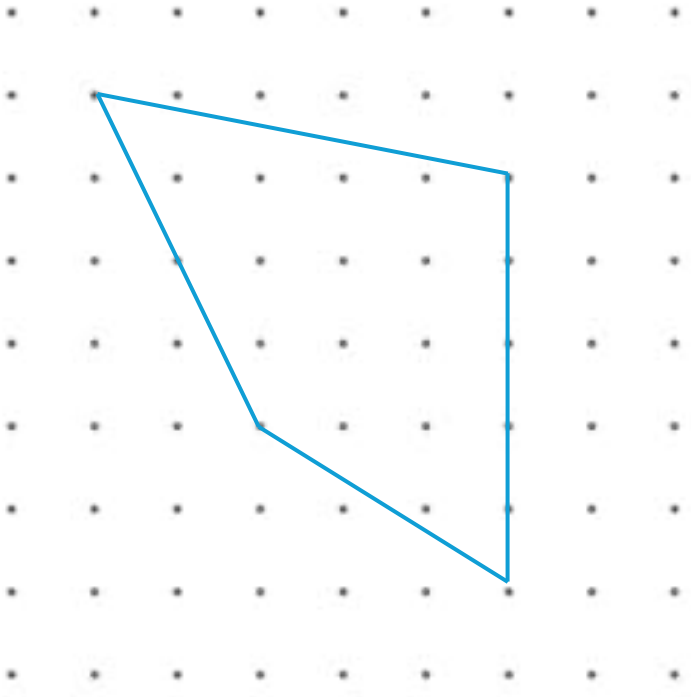
II: Entrance ➞ Lions ➞ Monkeys ➞ Tigers ➞ Crocodiles ➞ Tigers ➞ Exit
Walking Time in minutes = 12 + 10 + 8 + 6 + 6 + 20 =62 minutes

Answer: Route II will allow Joey to exit in 102 minutes at 11:42 am

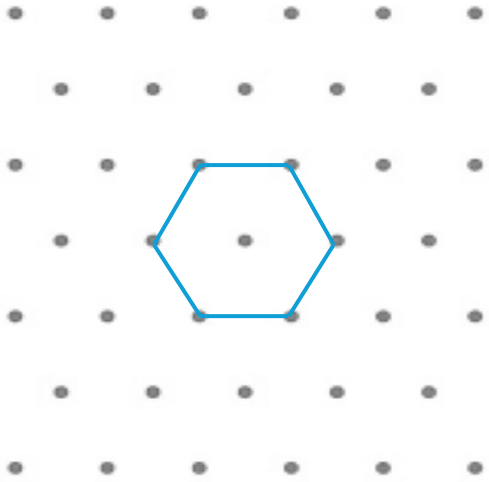
(4 marks)

39.

(a) A sample solution



(b) A sample solution - a regular hexagon – side 1 unit



(4 marks)

40. The mean of the first two numbers = 12

The sum of the first two numbers = 12 x 2 = 24, A + B = 24

A	B	C	D
		21	23

The mean of the first three numbers = 15

The sum of the first three numbers = 15 x 3 = 45, A + B + C = 45

A + B	
A + B	C

24

45

Therefore, C = 45 – 24 = 21, C = 21

The mean of all four numbers = 17 x 4 = 68, A + B + C + D = 68

A + B + C	
A + B + C	D

45

68

Therefore, D = 68 – 45 = 23, D = 23

We know that one of the numbers is 18.

Since neither C nor D is 18. Hence either A or B is 18.

We know that A + B = 24

Therefore, either A is 18 and B is 6 OR B is 18 and A is 6

Answer:

A	B	C	D
6	18	21	23

OR

A	B	C	D
18	6	21	23

(4 marks)

END OF TEST

FAS-PASS
Maths

PRACTICE TESTS FOR SEA MATHEMATICS

DETAILED SOLUTIONS

ONLINE TEST BOOKLET 12

TEST CODE KA2512

AUTHORS

Dr SHEREEN A. KHAN & Dr FAYAD W. ALI

2025-2028 ASSESSMENT FRAMEWORK

SECTION 1(20 marks)

1. We place each digit in their correct positions on a Place value Chart

Thousands			Ones		
100 000	10 000	1 000	100	10	1
	4	0	3	5	2

Answer: 40 352

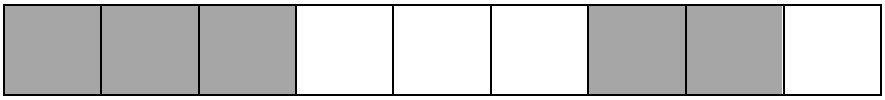
2.

Thousands	Hundreds	Tens	Ones
1	4	3	2

The value of the tens digit is 3 x 10 = 30

Answer: 30

3.

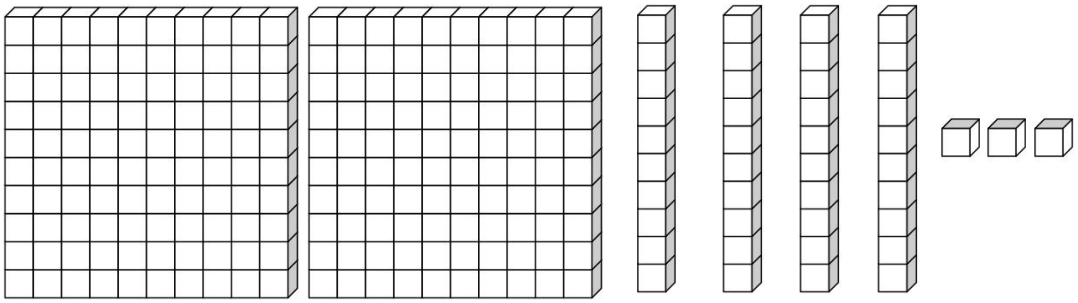


The bar is divided into 9 equal blocks of which 5 are shaded.

The fraction of the bar shaded = $\frac{5}{9}$

Answer: $\frac{5}{9}$

4.



2 hundreds 4 tens 3 ones

Hundreds	Tens	Ones
2	4	3

Answer: 243

5.

$0.04 = \frac{4}{100}$

We divide both the numerator and denominator by 4 to get the equivalent fraction of $\frac{1}{25}$

Ones 1	Tenths $\frac{1}{10}$	Hundredths $\frac{1}{100}$
0	0	4

Answer: $\frac{1}{25}$

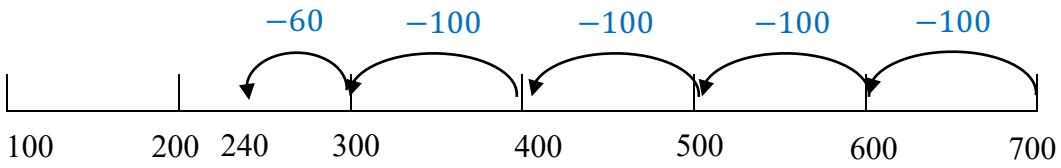
6.

6.42 - 6.24 = 0.18

Answer 0.18

Ones	Tenths	Hundredths
	3	12
6	~~4~~	~~2~~
6	2	4
	1	8

7. Pedro starts at 700 and moves backwards to 240.



He subtracts a total of (100 + 100 + 100 + 100 + 60) = 460 from 700 to get 240

Answer:

700 − 460 = 240

8. 3 x 3 x 3 x 3 = 81

(3 x 3) x (3 x 3) = 81

9 x 9 = 81

Hence ☆ = 9

Answer: 9

9. $2\frac{1}{2}$ dozen = (12 x 2) + (12 x $\frac{1}{2}$) = 24 + 6= 30

One crate holds 30 eggs
Number of crates that can be filled with 150 eggs = 150 ÷ 30 = 5

Answer: 5

10. In 3 weeks Sonya saves = $22.50

In one week Sonia will save = $22.50 ÷ 3 = $7.50

In 16 weeks Sonya would save $7.50 x 16 = $120.

$120 < $124.

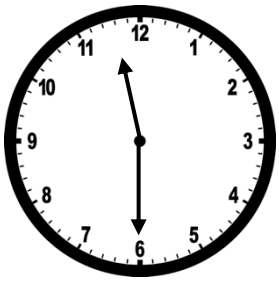
Hence Sonya would NOT have saved enough to purchase the chain.

Answer: No, she will be short by $4

11. The first bus leaves San Fernando at 10:20

The next bus will leave at 10:20 + 0:35 = 10:55
The third bus will leave at 10:55 + 0:35 = 11:30

Answer: The clock will show 11:30



12. We can compare the measurements when they are in the same units.

We choose to convert $1\frac{3}{8}$ litres to millilitres

$1\frac{3}{8}$ litres = 1000 ml + $\frac{3}{8}$ x 1 000 ml =1 375 ml

$\frac{1}{8}$ x 1 000 = 125

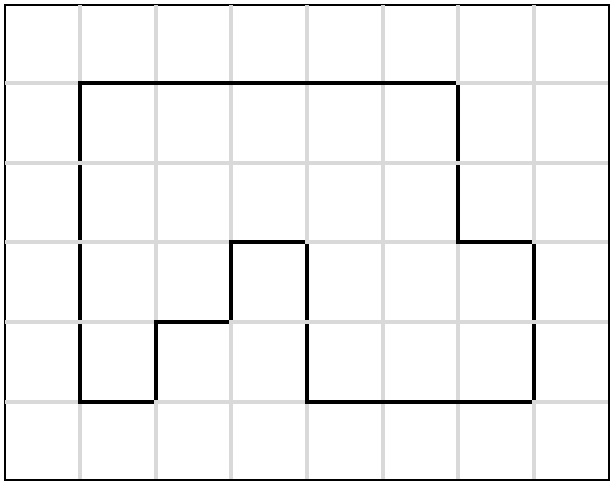
1 450 > 1375

$\frac{3}{8}$ x 1 000 = 375

So, in the box, we place >

Answer: >

13.



Starting from the top left we add the lengths of the blocks to get
5 + 2 + 1 + 2 + 3 + 2 + 1 + 1 + 1 + 1 + 1 + 4 = 24
Since each block is 1 cm long, the perimeter is 24 cm

Answer: 24 cm

14. $3\frac{3}{4}$ kg = $3\frac{3}{4}$ x 1 000 = 3 750 g

3.775 kg = 3.775 x 1 000 = 3 775 g

3 775 > 3 770 > 3 750

The difference between the heaviest and the lightest = 3 775 – 3 755 = 20 g

Answer: 20 g

15. A cuboid can have at most 2 identical square faces.

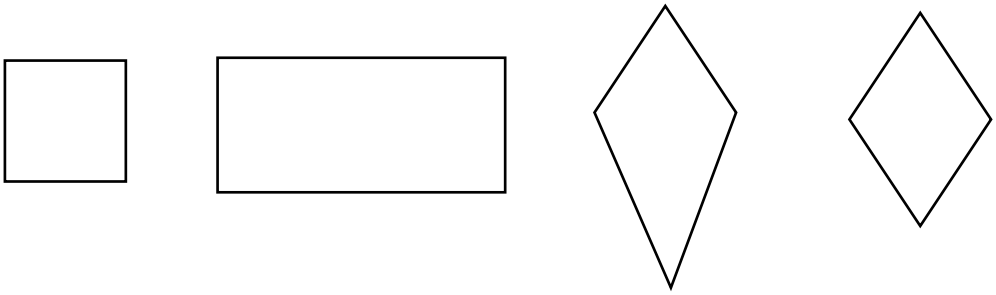
Answer: B

16. The repeating pattern shows a semi-circle followed by two pentagons and a cross.

So, a pentagon is the next shape in the pattern.

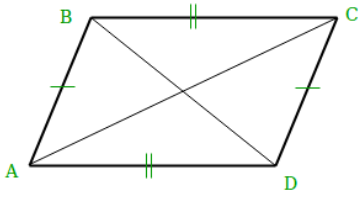
Answer 

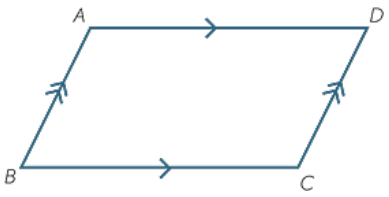
17.



Square Rectangle Kite Rhombus

The opposite sides of a parallelogram are both parallel and equal. This is so with the square, rectangle, and rhombus, but NOT with the kite. Hence, the kite is not a parallelogram – its opposite sides are neither equal nor parallel.





Answer Kite

18. Since 1 picture represents 1 car, then Andrea must buy 12 + 17 + 6 + 5 = 40 pictures.

Answer: 40

19. The number who do not walk to school use Private Car, Taxi, Bus or Maxi

= 21 + 15 + 18 + 12 = 66

Answer: 66 students

20. The modal score is the score that occurs most often.

In this case, the score of 2 occurred more times than any other score. Hence the modal score is 2.

Answer 2

SECTION 2 (39 marks)

21. $\frac{1}{4}$ x ☐ = 45 ÷ 3 = 15

☐ = 15 x 4 = 60

Answer: ☐ = 60

(2 marks)

22. Simple Interest = $\frac{\text{Principal x Rate x Time}}{100} = \frac{\$7\,000 \times 12 \times 2}{100}$ = $1 680

Therefore the amount to be repaid
= Amount Borrowed + Interest = $7 000 + $1 680 = $8 680

Answer: $ 8 680

(2 marks)

23.

$\frac{9}{8}$ $\frac{7}{3}$ $\frac{5}{6}$ $\frac{7}{5}$

$1\frac{1}{8}$ $2\frac{1}{3}$ $\frac{5}{6}$ $1\frac{2}{5}$

$\frac{5}{6} < 1$ and $2\frac{1}{3} > 2$

The fractions between 1 and 2 are $1\frac{1}{8}$ and $1\frac{2}{5}$ which are $\frac{9}{8}$ and $\frac{7}{5}$.

Answer $\frac{9}{8}$ and $\frac{7}{5}$.

(2 marks)

24. Cost of 5 tickets at $50 each = $50 x 5 = $250

Cost of 3 bags of popcorn at $26 per bag = $26 x 3 = $78

Cost of 4 sodas at $3.50 each = $3.50 x 4 = $14

Total amount spent = $342

Answer: $342

(2 marks)

25.

Term Number	1st	2nd	3rd	4th	5th	6th	7th
Value	4	5	8	13	20	28	39

Vashti is adding consecutive odd numbers to the previous number to get the next number in the pattern. In the first 5 terms, Vashti added

4 + 1 = 5, 5 + 3 = 8, 8 + 5 = 13, 13 + 7 = 20

In the 6th term, Vashti should have added 20 + 9 to get 29. However, the result in the table shows 28. Hence, the 6th term is incorrect.

In the 7th term, Vashti should now add 29 + 11 = 40. Instead, she added 28 + 11 = 39. Her 7th term is incorrect and should have been 29 + 11 = 40

Answer: The last two numbers, the 6th and the 7th, in the pattern, should have been… 29, 40

(3 marks)

26. To obtain the least number of stamps, he must buy the smallest number of $1 stamps possible and the largest number of $5 stamps possible.

4 @ $5 each + 2 @$3 each + 1 @ $1 totalling $20 + $6 + $1 = $27

Answer The least number of stamps will be 7

(3 marks)

27. 3 butterflies and 2 daisies cost $34

5 butterflies and 4 daisies cost $62

By adding we get 8 butterflies and 6 daisies cost $34 + $62 = $96

We now divide by 2 to get 4 butterflies and 3 daisies will cost $96 ÷ 2 = $48

Answer $48

(3 marks)

28. The pattern repeats with 4 Blue + 3 Red + 2 Green = 9 beads

Since Cindy had 63 beads and 63 ÷ 9 = 7, she requires 7 sets of blue, red and green.
Cindy would require 4 x 7 = 28 Blue beads which she has exactly.

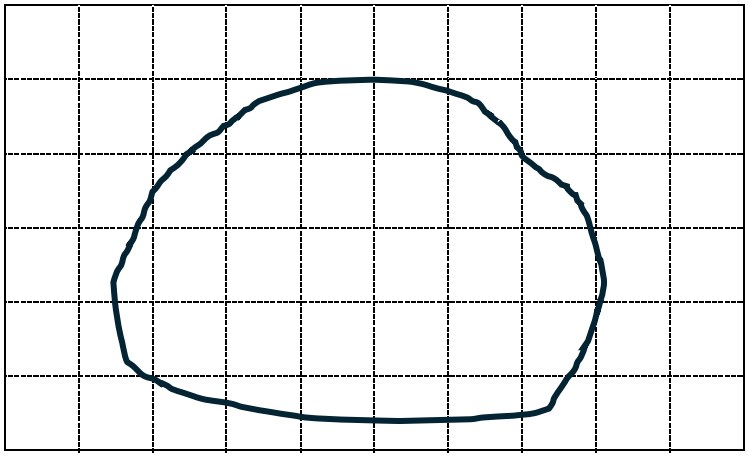
Cindy would require 3 x 7 = 21 red beads. Since she has 23 red beads she has 2 more than what is required.
Cindy would require 2 x 7 = 14 green beads. Since she has only 12 green beads she has 2 less than what is required.

Hence, Cindy cannot make the necklace with the number of beads given.

Answer No, she cannot make the necklace as required.

(3 marks)

29.



We count a whole square as 1, a region with more than $\frac{1}{2}$ a square as 1 and omit a region with less than $\frac{1}{2}$ a square. We count one row at a time.

Row 1 + Row 2 + Row 3 + Row 4 + Row 5 + Row 6 = (4 + 6 + 6 + 6 + 3) = 25 cm^2

Answer: 25 cm^2

(2 marks)

30. After using 1.6 kg for baking, Kyle had = 10 kg – 1.6 kg = 9.4 kg left

9.4 kg = 9.4 x 1 000 = 9 400 g

Hence, the number of 1 200 g packages that can be made = 9 400 ÷ 1 200

$$= \frac{9400}{1200} = \frac{94}{12} = \frac{47}{6} = 7\frac{5}{6}$$

Kyle can make 7 packages but does not have enough flour to make an 8th

Answer: 7

(2 marks)

31. Time taken to reach Chaguanas = 32 minutes

Time spent in Chaguanas = 15 minutes
Time taken to reach Port of Spain = 38 minutes
Total time spent after leaving San Fernando = 85 minutes = 1 hour 25 minutes
The bus arrives at at 8:14 + 1:25 = 9:39 am

Answer 9:39 am

(3 marks)

32. Nunmber of blocks in the top layer + middle layer + lower layer
= 4 + 8 + 12 = 24

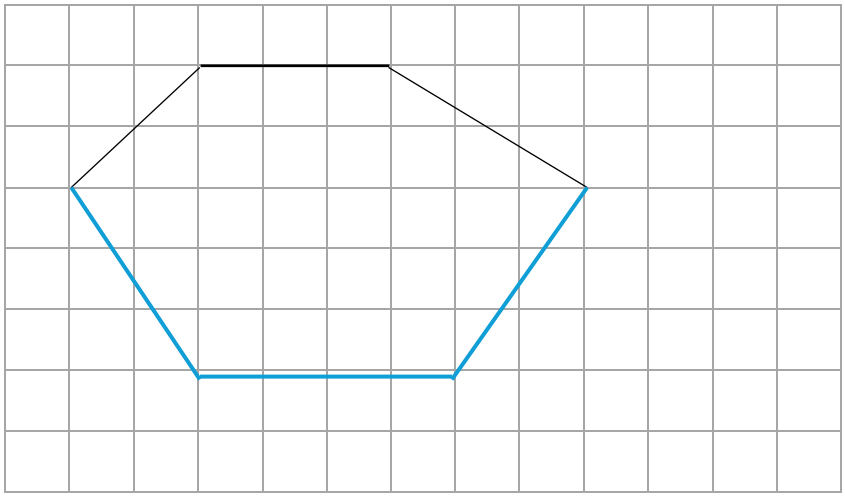
The volume of 1 block is $1 \times 1 \times 1 = 1\ cm^3$

Therefore, the volume of the solid = $24 \times 1\ cm^3 = 24\ cm^3$

Answer: $24\ cm^3$

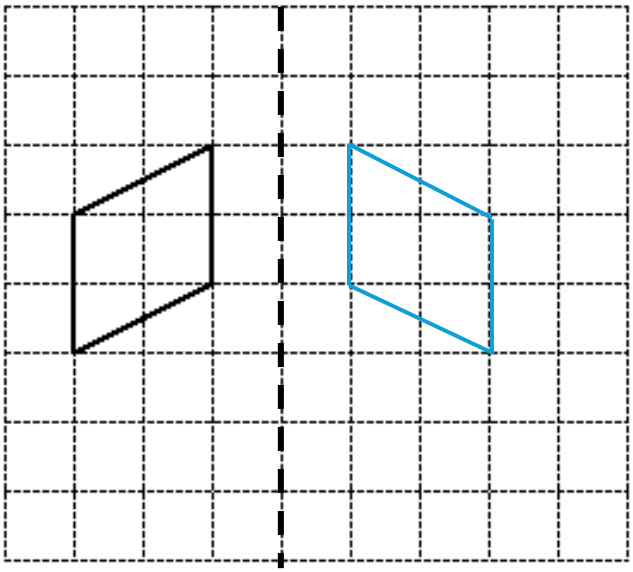
(3 marks)

33.



(2 marks)

34. The image is the same perpendicular distance behind the reflection line as the object is in front. Also, it is flipped or laterally inverted.



(2 marks)

35. The total height of the three people with a mean of 1.7 m = 1.7 m x3 = 5.1 m

The total height of the four people with a mean of 1.65 m = 1.65 m x 4 = 6.6 m

Therefore the height of the 4^{th} person = 6.6 – 5.1 = 1. 5 m

Answer: 1.5 m

(2 marks)

36. The cost of 125 tea tickets at \$50 each = \$50 x 125 = \$6 250

The total money received from the sale of tickets was \$14 225.

Therefore the cost of the 145 Barbecue tickets = \$14 225 - \$6 250 = \$ 7 975

Hence, the cost of 1 barbecue ticket = \$7 925 ÷145 = \$ 55

Answer \$55

(3 marks)

SECTION 3 (16 marks)

37. On Monday the number of flower plants that bloomed = $\frac{1}{2}$ (500) = 250.

Hence, the number of flower plants that were not blooming = 500 - 250 = 250.

On Tuesday the number of additional flower plants that bloomed = $\frac{1}{5}$ (250) = 50.
Hence, the number of flower plants that were not blooming = 250 - 50 = 200

On Wednesday the number of additional flower plants that bloomed = $\frac{1}{5}$ (200) = 40. Hence, the number of flower plants that were not blooming = 200 - 40 = 160

On Thursday the number of additional flower plants that bloomed = $\frac{1}{5}$ (160) = 32.
Hence, the number of flower plants that were not blooming = 160 - 32 = 128

Answer 128

(4 marks)

38.

Length = 24 cm – (3 + 3) cm = 18 cm
Breadth = 15 – (3 + 3) cm = 9 cm
Height = 3 cm
Volume = L x B x H = (15 x 9 x 3) cm^3 = 486 cm^3

Answer:

Length (cm)	Breadth (cm)	Height (cm)	Volume (cm^3)
24 – (3 + 3) = 18	15 – (3 + 3) = 9	3	15 x 9 x 3 = 486

(4 marks)

39.

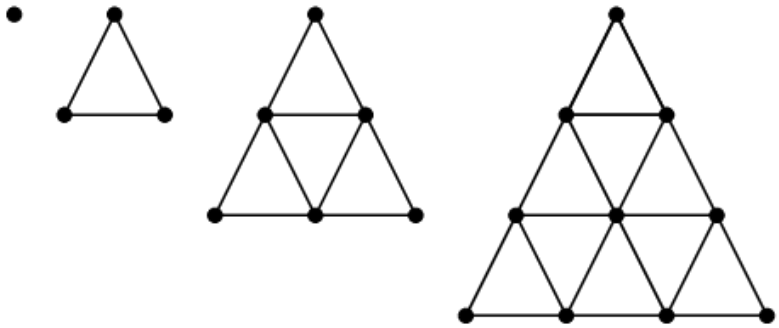


Figure 1 Figure 2 Figure 3 Figure 3

Figure	Number of dots	Number of triangles
1	1	$0 = (0)^2 = 0$
2	$3 = 1 + 2$	$1 = (2-1)^2 = 1^2 = 1$
3	$6 = 1 + 2 + 3$	$4 = (3-1)^2 = 2^2 = 4$
4	$1 + 2 + 3 + 4 = 10$	$(4-1)^2 = 3^2 = 9$
8	$= 1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 = 36$	$(8-1)^2 = 7^2 = 49$

(4 marks)

40.

(a)

Number of text messages	Tally	Frequency
1-20	𝍸	9
21-30	𝍸 𝍸 |	11
31-40	𝍸 𝍸	10

(b) On the 9 days when her messages were less than 20, there were no charges.

11 messages @$1.10 = $12.10

10 messages @$0.95 = $9.50

Total = $21.60

(4 marks)

END OF TEST

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ABOUT THE AUTHORS

Dr Shereen Khan and Dr Fayad Ali are renowned mathematics educators, each with almost five decades of experience in the teaching and assessment of mathematics. They are co-founders of the website faspassmaths.com in which solutions of SEA mathematics examinations, CSEC Mathematics, Additional Mathematics examinations and all national mathematics examinations are published free for all users with hits exceeding 8.1 million. They have jointly written several mathematics textbooks, workbooks and study guides.

Dr. Shereen Khan has been a primary mathematics teacher educator for 25 years, a mathematics curriculum coordinator for 12 years and a secondary school mathematics teacher for 11 years. She has a wealth of experience in the preparation and marking of mathematics examinations regionally, having served as Chief Examiner in both SEA Mathematics and CSEC Mathematics.

Dr. Fayad Ali has had outstanding success in preparing students for examinations at the secondary school level. He has produced hundreds of national scholarship winners through his excellence in teaching mathematics. Dr Ali has worked with several international authors to produce many successful mathematics textbooks and workbooks used in schools internationally.