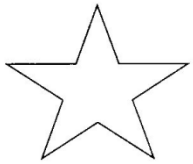
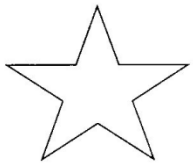
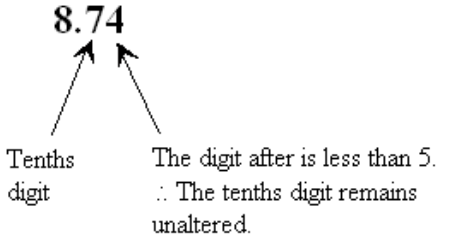
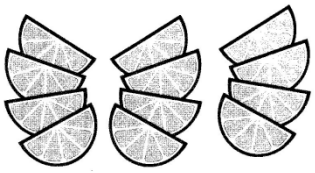
FAS-PASS
Maths

SEA MATHS 2011

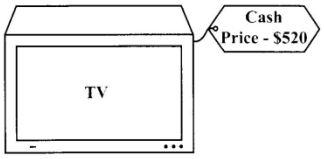
Section I

No.	TEST ITEMS	WORKING COLUMN	*Do Not Write Here*		
				KC	AT	PS
1.	Calculate: 1996 − 684 _____ **Answer: 1312**	1996 − 684 1312				
2.	Write in words: 12 540 **Answer: Twelve thousand, five hundred and forty**	TTh: **1** (Twelve thousand); Th: **2**; H: **5** (Five Hundred); Tens: **4**; Units: **0** (Forty)				
3.	A starfish has 5 arms as shown below.  How many arms will 16 starfish have? **Answer: 80 arms**	 1 starfish has 5 arms 16 starfish will have 5×16 arms = 80 arms 80 =				
4.	Write 8.74 to the NEAREST tenth. **Answer: 8.7**	 The digit after the tenths digit, which is 4, is now omitted Hence, $8.7\underline{4} = 8.7$ to the nearest tenth				

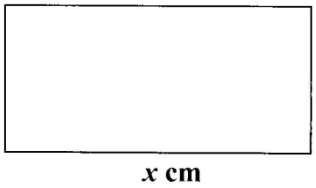
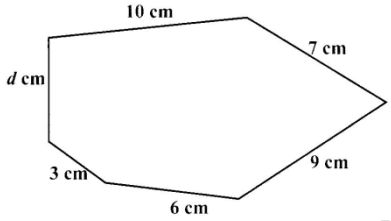
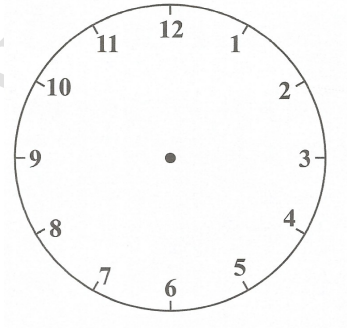
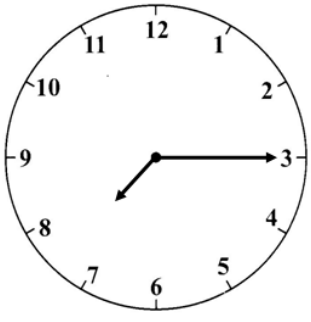
By Fayad W. Ali and Shereen A. Khan.

No.	TEST ITEMS	WORKING COLUMN	*Do Not Write Here*			
				KC	AT	PS
5.	Arrange the fractions below in ASCENDING order. (Begin with the SMALLEST.) $\frac{1}{4}$ $\frac{1}{12}$ $\frac{1}{3}$ $\frac{1}{6}$ **Answer: $\frac{1}{12}$, $\frac{1}{6}$, $\frac{1}{4}$ and $\frac{1}{3}$**	$\frac{1}{4}, \frac{1}{12}, \frac{1}{3}$ and $\frac{1}{6}$ should all be expressed as fractions in the same denominator, so as to easily compare them. 12 is a common multiple of 3, 4 and 6. We now express each as an equivalent fraction with denominator 12. $\frac{1}{4} = \frac{1 \times 3}{4 \times 3} = \frac{3}{12}$ $\frac{1}{3} = \frac{1 \times 4}{3 \times 4} = \frac{4}{12}$ $\frac{1}{6} = \frac{1 \times 2}{6 \times 2} = \frac{2}{12}$ The smallest of the four given fractions is $\frac{1}{12}$. Beginning with the smallest, we have: $\frac{1}{12}, \frac{2}{12}, \frac{3}{12}$ and $\frac{4}{12}$ OR $\frac{1}{12}, \frac{1}{6}, \frac{1}{4}$ and $\frac{1}{3}$ (written in original form)				
6.	Jamie divides an orange into 12 equal slices.  She gives $\frac{3}{4}$ to her friend. How many slices does Jamie give to her friend? **Answer: 9 slices**	Number of slices = 12 $\frac{1}{4}$ of this number of slices = 12 ÷ 4 = 3 $\frac{3}{4}$ of the number of slices = 3 × 3 = 9 Therefore, the number of slices Jamie gave to her friend is 9 OR $\frac{3}{4} \times 12 = 9$				

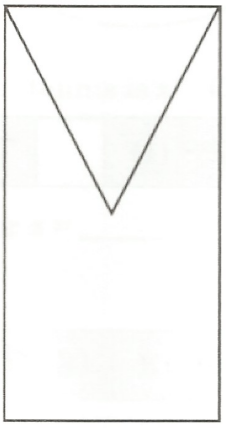
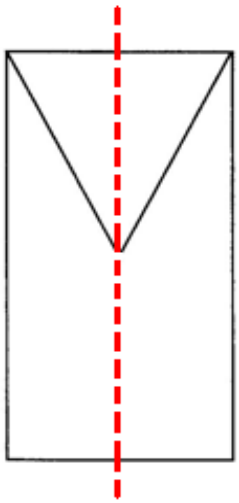
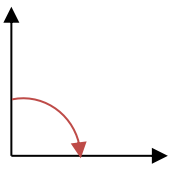
By Fayad W. Ali and Shereen A. Khan.

No.	TEST ITEMS	WORKING COLUMN	*Do Not Write Here*			
				KC	AT	PS
7.	The whole shape below is divided into the portions shown. 30% | 10% | x% | x% | x% What number does x represent? **Answer: 20**	A whole consists of 100%. All the parts will sum to 100. Two parts sum to (30+ 10) % = 40% Remaining parts will sum to = (100 – 40)% = 60% Since each part is equal to x x %= 60 ÷ 3 = 20				
8.	Ms. Mohammed is paying cash for the TV and receives a 20% discount.  Calculate the amount of this discount. **Answer: $104**	The Cash price of TV = $520 Discount = 20% Actual discount: $= \frac{20}{100} \times \$520$ $= \frac{1}{5} \times \$520$ $= \$104$				
9.	A rope is 2.5 m long. What is its length in centimetres? **Answer: 250 cm**	Length of rope = 2.5 m 100 cm = 1 m Length of rope, in cm = 2.5 × 100 cm = 250 cm				
10.	How many quarters (25¢ coins) will Tori get in exchange for a $5.00 note? **Answer: 20 coins**	Number of 25¢ in $1.00 = $\frac{100}{25} = 4$ Number of 25¢ coins that can be obtained from $5.00 = 5 × 4 = 20				
11.	Sam bought a book for $3.75. He sold it for $5.25. How much profit did he make? **Answer: $1.50**	Profit = Selling price – Cost price = $5.25 - $3.75 =$1.50				

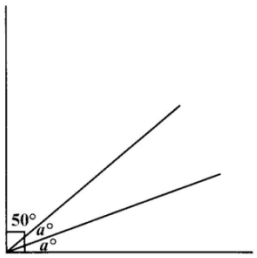
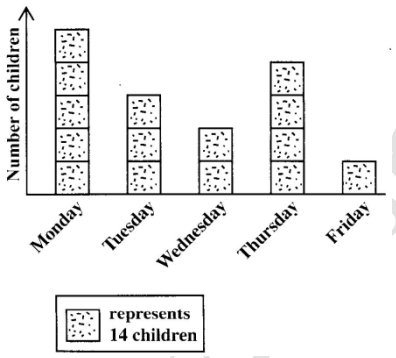
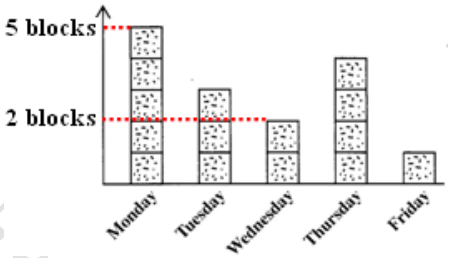
By Fayad W. Ali and Shereen A. Khan.

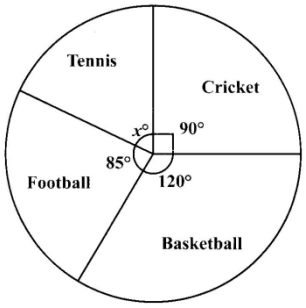
No.	TEST ITEMS	WORKING COLUMN	*Do Not Write Here*			
				KC	AT	PS
12.	The width of the rectangular card below is 4 cm. The length, x cm, of the card is twice the width.  Calculate the area of the card. **Answer: 32 cm^2**	The length of the rectangle is twice the width, therefore Length, x cm $= 2 \times$ width $= 2 \times 4$ cm $= 8$ cm Area of rectangle $=$ length$\times$width $= 8 \times 4$ $= 32$ cm^2				
13.	A piece of board has the shape shown below. The perimeter of the board is 40 cm.  Calculate the length of the side marked d cm. **Answer: 5 cm**	Perimeter of board = 40 cm The perimeter is the sum of the lengths of all the 6 sides Sum of the lengths of 5 sides = 10 cm + 7 cm + 9 cm + 6 cm + 3 cm = 35 cm Length of sixth side = d cm $d = 40 - 35$ cm $d = 5$ cm				
14.	Indira awoke at quarter past seven. Draw in the hands on the clock below to show the time Indira awoke.  	A quarter past seven is 15 minutes past 7 o'clock. The long hand should point at 3 to indicate 15 minutes after the hour. The hour hand between 7 and 8 as shown.  				

By Fayad W. Ali and Shereen A. Khan.

No.	TEST ITEMS	WORKING COLUMN	*Do Not Write Here*			
				KC	AT	PS
15.	School starts at 8:45 a.m. Sally arrived half of an hour late. What time did she arrive at school? **Answer: 9:15 a.m.**	1 hour = 60 minutes. $\frac{1}{2}$ hour = 30 minutes. Sally is minutes late and her arrival time will be 30 minutes after 8:45. 1 8:45 + [45+30 =75minutes = 1hr +15 m] :30 9:15 Sally arrived at 9:15 a.m.				
16.	Draw the line or lines of symmetry in the plane shape below. 	The dotted line shows the only line of symmetry. On both sides of the line of symmetry the pattern is the same. 				
17.	Sajani is facing North. She turns CLOCKWISE to face East. Through how many degrees has Sajani turned? **Answer: 90 degrees**	North  East Sajani made a quarter turn. 1 whole turn = 360^0 1 quarter turn = $\frac{1}{4} \times 360^0 = 90^0$				

By Fayad W. Ali and Shereen A. Khan.

No.	TEST ITEMS	WORKING COLUMN	*Do Not Write Here*		
				KC	AT	PS
18.	In the diagram below, the two angles labelled '*a*' are equal. Calculate the value of '*a*'.  **Answer: *a* = 20**	The sum of all three angles is 90 degrees. Since one angle is 50 degrees, then the sum of the two angles labelled *a* is $= 90^0 - 50^0$ $= 40^0$ But both angles are the same size, a^0 The value of *a* is $= 40^o \div 2$ $= 20^0$				
19.	The graph below shows the number of children buying ice-cream from Monday to Friday.  How many MORE children bought ice-cream on Monday than on Wednesday? **Answer: 42 children**	 The bar for Wednesday is 2 blocks high. The bar for Monday is 5 blocks high. The difference in height = 3 blocks 1 block represents 14 children. 3 blocks represent 3 × 14 children = 42 children On Monday, 42 more children bought ice-cream than on Wednesday.				

No.	TEST ITEMS	WORKING COLUMN	*Do Not Write Here*			
				KC	AT	PS
20.	The pie chart below shows the favourite sports of students of Standard 4.  The angle for tennis is $x°$. Calculate the value of x. **Answer: $x = 65$**	The sum of all the angles in all the sectors of a pie chart totals 360°. The sum of the angles for cricket, basketball and football is $90° + 120° + 85° = 295°$ The size of the angle of the sector which represents tennis, x^0 $= 360° - 295^0$ $= 65^0$				

By Fayad W. Ali and Shereen A. Khan.

Section II

No.	TEST ITEMS	WORKING COLUMN	*Do Not Write Here*			
				KC	AT	PS
21.	Calculate: $16\frac{1}{5} \div 2\frac{7}{10}$ **Answer: 6**	$16\frac{1}{5} = \frac{81}{5}$ $\quad 2\frac{7}{10} = \frac{27}{10}$ $16\frac{1}{5} \div 2\frac{7}{10}$ $= \frac{81}{5} \div \frac{27}{10}$ $= \frac{\cancel{81}^{3}}{\cancel{5}} \times \frac{\cancel{10}^{2}}{\cancel{27}}$ $= 3 \times 2$ $= 6$				
22.	Ravi has 56 marbles. Scott has half as many as Ravi. How many marbles do they have ALTOGETHER? **Answer: 84 marbles**	Ravi has 56 marbles. Scott has half as many. Therefore, the number Scott has $= \frac{1}{2}(56)$ $= 28$ marbles The total number of marbles that both boys have = 56 + 28 = 84				
23.	In a speed-reading competition, Anna read 10 pages for every 7 pages that Kevin read. At the end of the competition, Kevin read 140 pages. How many pages did Anna read? **Answer: 200 pages**	Kevin read 140 pages. Anna read 10 pages for every 7 pages that Kevin read. Number of groups of '7' in 140 $= \frac{140}{7}$ $= 20$ Number of pages Anna reads $= 20 \times 10$ $= 200$ pages				

By Fayad W. Ali and Shereen A. Khan.

<table>
<tr><th rowspan="2">No.</th><th rowspan="2">TEST ITEMS</th><th rowspan="2">WORKING COLUMN</th><th colspan="4">Do Not Write Here</th></tr>
<tr><th></th><th>KC</th><th>AT</th><th>PS</th></tr>
<tr><td>24.</td><td>Tom sets out on a journey of 1 km. He ran $\frac{1}{3}$ km and then walked $\frac{3}{5}$ km. What fraction of the journey did Tom still have to travel to complete 1 km?

Answer: $\frac{1}{15}$</td><td>Tom ran $\frac{1}{3}$ of the journey

Tom walked $\frac{3}{5}$ of the journey

The fraction of the distance that Tom ran and walked
$= \frac{1}{3}+\frac{3}{5}$
$=\frac{5}{15}+\frac{9}{15}=\frac{14}{15}$
The entire journey is considered as the whole and = 1
The fraction of the journey that Tom has to complete
$=1-\frac{14}{15}$
$=\frac{15}{15}-\frac{14}{15}$
$=\frac{1}{15}$</td><td></td><td></td><td></td><td></td></tr>
<tr><td>25.</td><td>There are 15 weeks in the school term. Paul went to school for the first 2 weeks and was absent the next week. This pattern was repeated throughout the whole term. How many weeks was Paul present during the term?

Answer: 10 weeks</td><td>Paul has been present for 2 weeks and then absent for 1 week.
In every 3 weeks Paul has been present for 2 weeks and absent for 1 week.
Paul would have repeated this pattern 5 times in the 15 weeks
During 15 weeks, Paul would have been present for 2×5 weeks = 10 weeks.
OR
Recording his data in a table gives
<table>
<tr><th>Weeks Present</th><th>Weeks Absent</th><th>Total</th></tr>
<tr><td>2</td><td>1</td><td>3</td></tr>
<tr><td>2</td><td>1</td><td>3</td></tr>
<tr><td>2</td><td>1</td><td>3</td></tr>
<tr><td>2</td><td>1</td><td>3</td></tr>
<tr><td>2</td><td>1</td><td>3</td></tr>
<tr><td>10</td><td>5</td><td>15</td></tr>
</table>
He was present for 10 weeks</td><td></td><td></td><td></td><td></td></tr>
</table>

By Fayad W. Ali and Shereen A. Khan.

<table>
<tr><th rowspan="2">No.</th><th rowspan="2">TEST ITEMS</th><th rowspan="2">WORKING COLUMN</th><th colspan="4">Do Not Write Here</th></tr>
<tr><th></th><th>KC</th><th>AT</th><th>PS</th></tr>
<tr><td>26.</td><td>a) Write in the box below the sign, > or <, that CORRECTLY completes the number sentence.

$\frac{3}{4}$ ☐ $\frac{2}{3}$

Answer:

$\frac{3}{4}$ [>] $\frac{2}{3}$

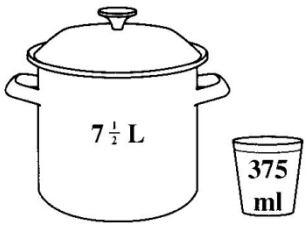
b) Find the difference between

$\frac{3}{4}$ and $\frac{2}{3}$

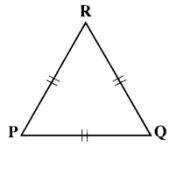
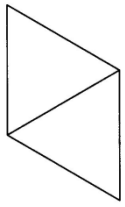
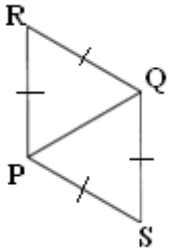
Answer: $\frac{1}{12}$</td><td>a) To compare $\frac{3}{4}$ and $\frac{2}{3}$ we express them both with the a common denominator of 12.
$\frac{3}{4}=\frac{3\times3}{4\times3}=\frac{9}{12}$
$\frac{2}{3}=\frac{2\times4}{3\times4}=\frac{8}{12}$
$\frac{9}{12}$ is greater than $\frac{8}{12}$.
Hence, $\frac{3}{4}>\frac{2}{3}$.

b) Difference between $\frac{3}{4}$ and $\frac{2}{3}$ is the same as the difference between $\frac{9}{12}$ and $\frac{8}{12}$.
$=\frac{9}{12}-\frac{8}{12}$
$=\frac{1}{12}$</td><td></td><td></td><td></td><td></td></tr>
<tr><td>27.</td><td>Complete the table below by writing in the CORRECT percentage at (a) and fraction at (b).
<table><tr><th>Fraction (lowest term)</th><th>Percentage</th><th>Decimal</th></tr><tr><td>$\frac{2}{3}$</td><td>(a) $66\frac{2}{3}\%$</td><td></td></tr><tr><td>(b) $\frac{1}{200}$</td><td></td><td>0.005</td></tr></table></td><td>a) The fraction $\frac{2}{3}$ as a percentage
$=\frac{2}{3}\times100$
$=66\frac{2}{3}\%$

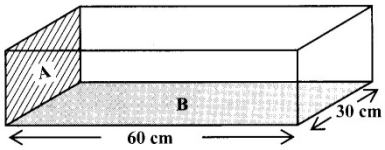
b) The decimal 0.005 as a fraction
$=\frac{5}{1000}$
$=\frac{1}{200}$ as a fraction in lowest terms
These values are inserted in the table, as shown.</td><td></td><td></td><td></td><td></td></tr>
</table>

No.	TEST ITEMS	WORKING COLUMN	*Do Not Write Here*			
				KC	AT	PS
28.	Study the number pattern below. 1 | 4 | 9 | 16 | 25 | 36 a) Write in the TWO missing numbers. **Answer: 16 and 25** b) What is the NINTH number in this number pattern? **Answer: 81**	a) We observe a pattern of the numbers as: 1 | 4 | 9 | 16 | 25 | 36 1^2 | 2^2 | 3^2 | 4^2 | 5^2 | 6^2 The missing numbers are therefore 16 and 25. b) As observed, the pattern seems to be the square of the position of the number. The 9^{th} number×in the pattern should be $9^2 = 9 \times 9 = 81$.				
29.	A food vendor made $7\frac{1}{2}$ litres of soup for sale. She sells the soup in servings of 375 ml.  How many servings of soup can she get from the $7\frac{1}{2}$ litres? **Answer: 20 servings**	Amount of soup = $7\frac{1}{2}$ litres 1 litre = 1000 ml $7\frac{1}{2}$ litres $= 7\frac{1}{2} \times 1000$ ml $= 7500$ ml Size of each serving = 375 ml Number of servings $= \frac{7500}{375}$ $= 20$				

By Fayad W. Ali and Shereen A. Khan.

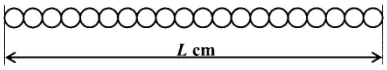
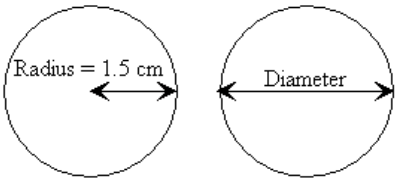
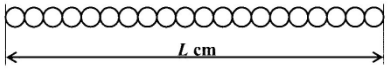
No.	TEST ITEMS	WORKING COLUMN	*Do Not Write Here*			
				KC	AT	PS
30.	The combined weight of Jane and her sister, Nora, is 51.4 kg. If Jane is 5.6 kg heavier than Nora, how much does Nora weigh? **Answer: 22.9 kg**	The combined weight of Jane and Nora is represented in the diagram: Nora's weight | Jane's weight Total 51.4 kg Jane is heavier than Nora by 5.6 kg. We can replace Jane's weight by Nora's weight plus 5.6 kg. Nora's weight | Nora's weight | 5.6 kg Total 51.4 kg If we subtract 5.6 kg from the total weight of 51.4 kg we will be left with 45.8 kg 51.4–5.6 = 45.8kg Nora's weight | Nora's weight Total 45.8 kg Twice Nora's weight = 45.8 kg Nora's weight = 45.8 ÷2 = 22.9 kg				
31.	The sides of triangle PQR are equal in length. The perimeter of PQR is 21 cm.   Diagram II a) What is the length of PQ? **Answer: 7 cm** b) Two triangles identical to PQR are combined as shown in Diagram II to form a new shape. Find the perimeter of the new shape. **Answer: 28 cm**	a) The sum of the three equal sides of triangle PQR = 21 cm Length of any one side, say PQ = 21 cm ÷ 3 = 7 cm b) Let us name the combined figure PRQS, as shown.  Hence, PR = RQ = QS = SP = 7cm The perimeter of the new shape is the total distance around the shape = PR + RQ + QS + SP = 7 + 7 + 7 + 7 cm = 28 cm				

By Fayad W. Ali and Shereen A. Khan.

No.	TEST ITEMS	WORKING COLUMN	*Do Not Write Here*			
				KC	AT	PS
32.	The volume of the cuboid fish-tank, shown below, is 72 000 cm^3.  a) What is the area of its base, labelled B? **Answer: 1800 cm^2** b) How deep is the fish tank? **Answer: 40 cm** c) Calculate the area of the shaded side A. **Answer: 1200 cm^2**	a) Area of the rectangular base, B $= \text{Length} \times \text{Width}$ $= 60\text{ cm} \times 30\text{ cm}$ $= 1800\text{ cm}^2$ b) The volume of the tank = 72 000 cm^3 Volume = Base Area × Depth 72 000 = 1 800 × Depth Depth = 72 000 ÷ 1 800 = 40 cm c) Area of the side shown as A = Depth × Width $= 40\text{ cm} \times 30\text{ cm}$ $= 1200\text{ cm}^2$				

By Fayad W. Ali and Shereen A. Khan.

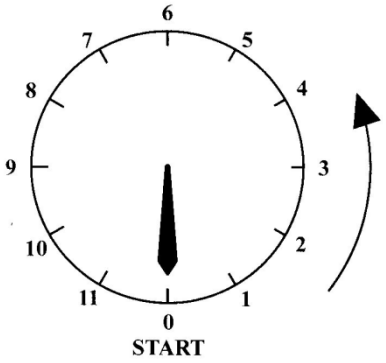
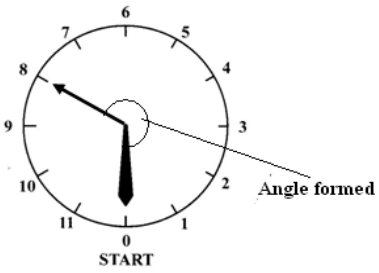
No.	TEST ITEMS	WORKING COLUMN	*Do Not Write Here*		
				KC	AT	PS
33.	Chelsea bought some items at 'Reflex Clothing Store'. Her bill is shown below. Some values are not stated. **Reflex Clothing Store** **Quantity** **Item** **Unit Cost** **Cost** 1 Track Pants @ $55.00 $55.00 3 T-shirts @ $20.00 [ ] 5 Handkerchiefs @ $4.00 $20.00 Total before VAT $135.00 VAT 15% [ ] Total Cost after VAT [ ] Calculate: a) The cost of 3 T-shirts. **Answer: $60** b) The VAT on her total bill. **Answer: $20.25** c) The TOTAL cost after VAT. **Answer: $155.25**	a) The cost of 3 T-shirts at $20 each $= \$20 \times 3$ $= \$60$ b) The total bill before VAT = \$ 55.00 \$ 60.00 + \$ 20.00 \$135.00 VAT = 15% of \$135.00 $= \frac{15}{100} \times \$135.00$ $= \$20.25$ c) The total cost after VAT = Cost of the items + VAT charged = \$135.00 + \$20.25 = \$155.25				

No.	TEST ITEMS	WORKING COLUMN	*Do Not Write Here*		
				KC	AT	PS
34.	Shae designed a gold chain by using 20 thin gold circles arranged as shown below. Each circle has a radius of 1.5 cm.  a) What is the diameter of EACH circle? **Answer: 3 cm** b) Calculate the length, L cm, of the chain. **Answer: 60 cm** c) Shae needs a matching bracelet to measure 18 cm in length. How many circles are needed? **Answer: 6**	a)  Radius of each circle = 1.5 cm Diameter = 2 × Radius = 2 × 1.5 cm = 3 cm b)  Since the chain is made of 20 circles then the length, L, of the chain = Diameter of one circle ×20 = 3 cm × 20 = 60 cm c) Total length of the bracelet = 18 cm Diameter of each circle = 3 cm The number of circles required $= \frac{Total\ length\ of\ the\ bracelet}{Diameter\ of\ one\ circle}$ $= \frac{18\ cm}{3\ cm}$ = 6 circles				

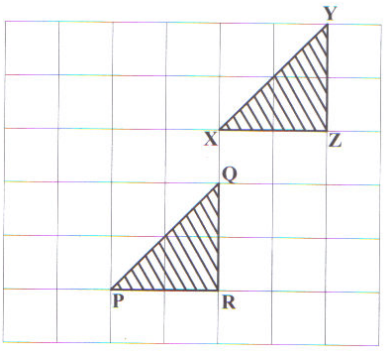
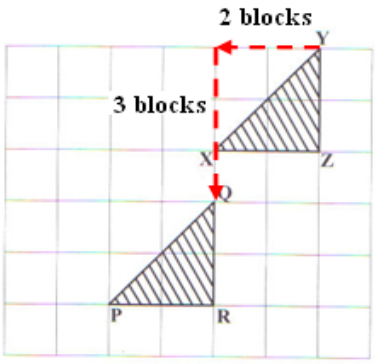
By Fayad W. Ali and Shereen A. Khan.

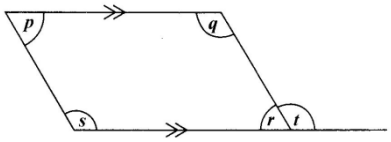
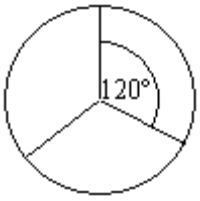
No.	TEST ITEMS	WORKING COLUMN	*Do Not Write Here*			
				KC	AT	PS
35.	The entrance fee to a cricket match was \$12 for a teacher and half-price for a student. A group of 20 students and 3 teachers went to the match. Calculate the TOTAL entrance fee for the group. **Answer: \$156**	Entry fee for teacher = \$12.00 Entry fee for student $= \frac{1}{2}$ of \$12.00 = \$6.00 Total entrance fee for 20 students = \$6 × 20 = \$120 Total entrance fee for 3 teachers = \$12 × 3 = \$36 Total entry fee for the group = \$120 + \$36 = \$156				

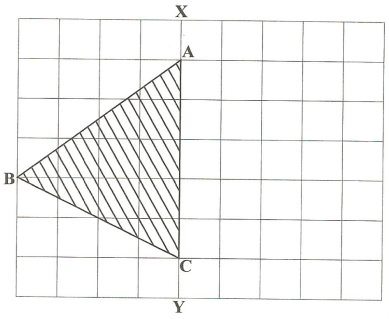
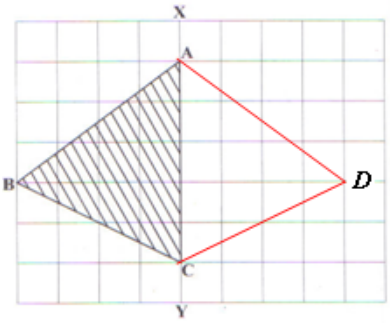
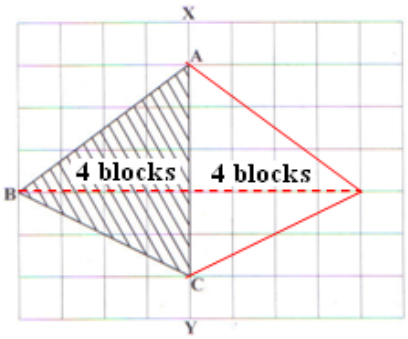
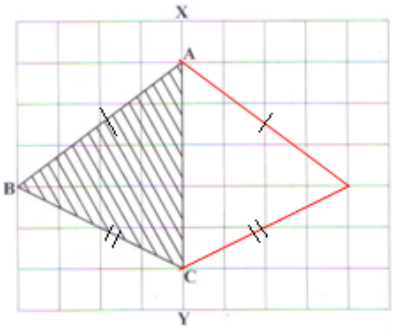
By Fayad W. Ali and Shereen A. Khan.

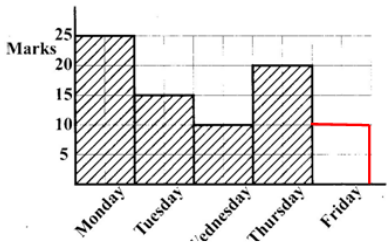
No.	TEST ITEMS	WORKING COLUMN	*Do Not Write Here*			
				KC	AT	PS
36.	The gauge needle on a welder's gas tank moves in the direction of the arrow shown below.  b) How many degrees does the needle turn through from START to 8? **Answer: 240 degrees** c) The needle moves from 0 through 135 degrees. Where is the new position of the needle? **Answer: Halfway between 4 and 5**	a)  One complete turn of the needle $= 360^0$ Assuming the numbers 0 -11 are equally spaced around the tank, there are 12 equal intervals in an entire revolution. Hence the size of each angle in an interval between any two consecutive numbers $= 360° \div 12 = 30^0$ From start to 8, the needle turns through 8 intervals, each of size 30^0. Total turn $= 30^0 \times 8 = 240^0$ b) The needle moves through 135° from 0. The number of 30^0 turns that the needle moves through from 0 through 135 degrees $= 135^0 \div 30$ $= 4\frac{1}{2}$ That is, halfway between the 4 and 5.				

By Fayad W. Ali and Shereen A. Khan.

No.	TEST ITEMS	WORKING COLUMN	*Do Not Write Here*		
				KC	AT	PS
37.	The triangle XYZ is moved to the position of triangle PQR.  a) Name the movement. **Answer: Translation** b) Describe this movement FULLY. **Answer: Triangle XYZ is shifted 2 units horizontally to the left and 3 units vertically downwards to triangle PQR.**	a) Triangle XYZ is moved to triangle PQR. There is no flipping or turning. Therefore, the movement is a translation. b) Let us consider the point, Y and its image Q. We can describe the movement using horizontal and vertical distances as the point moves from the object position to the image position.  Y is shifted 2 blocks or units horizontally to the left and 3 blocks or units vertically downwards to Q. The description of the movement from Y to Q is the same as the movement of any other object point to image point.				

No.	TEST ITEMS	WORKING COLUMN	*Do Not Write Here*		
				KC	AT	PS
38.	Refer to the diagram below to answer the questions that follow.  a) Name an angle that is less than 90°. **Answer: *r*** b) Which angle is APPROXIMATELY one-third of a whole turn? **Answer: *s*** c) Which angles TOGETHER have the SAME measure as a half turn? **Answer: *t* and *r*** 	a) An angle less than 90° appears to be *r*. (Also angle *p*). b) One complete turn = 360° $\frac{1}{3}$ of a turn = $\frac{1}{3}(360°)$ = 120° that looks like:  $\therefore$ An angle which is approximately $\frac{1}{3}$ of a turn is *s*. (Also *q*). c) $\frac{1}{2}$ a turn $= \frac{1}{2}(360°)$ = 180° *t* and *r* together have the same measure as half a turn. (Also *p* and *q*, *p* and *s* *r* and *q* *s* and *r*)				

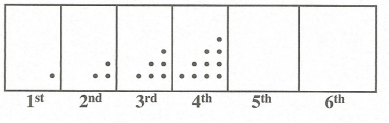
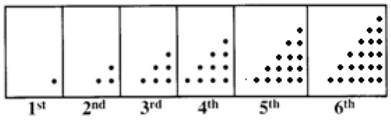
No.	TEST ITEMS	WORKING COLUMN	*Do Not Write Here* KC	AT	PS
39.	XY is a line of symmetry of the incomplete figure ABCD shown below.  b) Complete the drawing of ABCD.  c) Circle the best term from the list below that BEST describes ABCD. **Answer:** Parallelogram Square Quadrilateral Rhombus **Answer:** Parallelogram Square Quadrilateral Rhombus	a) A and C lie on the line of symmetry. D will be the same distance from the mirror line as B, but on the opposite side of XY. Join D to A and D to C to complete the diagram.  D b) Describing the figure ABCD. Since the opposite sides are not parallel, it is not a parallelogram. Since all the sides are not equal, it is neither a rhombus nor a square.  Alternate sides are equal, AB = AD and BC = BD as shown. The figure is a quadrilateral. More precisely it is a kite which is **NOT** one of the mentioned options.			

No.	TEST ITEMS	WORKING COLUMN	*Do Not Write Here*			
				KC	AT	PS
40.	The incomplete graph below shows the marks that John scored in Mathematics each day during a particular week.  John scored a total of 80 marks for that week. Complete the graph to show how many marks he scored on Friday.	Mark obtained on Monday = 25 Mark obtained on Tuesday = 15 + Mark obtained on Wednesday = 10 Mark obtained on Thursday = 20 Total = 70 The total mark including Friday's mark = 80 Friday's mark = Total mark for Monday to Friday – Total mark from Monday to Thursday = 80 – 70 = 10 marks				

By Fayad W. Ali and Shereen A. Khan.

FAS-PASS
Maths

Section III

No.	TEST ITEMS	WORKING COLUMN	*Do Not Write Here*		
				KC	AT	PS
41.	Jamie uses dots to create a set of patterns as show below.  a) How many dots are in the FOURTH pattern? **Answer: 10 dots** b) Draw the FIFTH and SIXTH patterns in the space on the diagram. **Answer:**  c) How many dots are in the EIGHTH pattern? **Answer: 36 dots**	a) In the 4^{th} pattern there are $4 + 3 + 2 + 1 = 10$ dots b) The 5^{th} pattern is  The 6^{th} pattern is  c) The eighth pattern will have $8+7+6+5+4+3+2+1 = 36$ dots The 8^{th} pattern has 36 dots.				

By Fayad W. Ali and Shereen A. Khan.

No.	TEST ITEMS	WORKING COLUMN	*Do Not Write Here*			
				KC	AT	PS
42.	A farmer harvested 600 peppers from his garden. He sold 90% of the peppers and gave the remainder to a children's home. a) (i) Calculate the number of peppers that the farmer sold. **Answer: 540 peppers** (ii) How many peppers did he give away? **Answer: 60 peppers** b) The farmer sold the peppers at a 5 for \$8.00. Calculate how much money he made from the peppers sold in Part(a). **Answer: \$864**	Number of peppers harvested = 600 Percentage sold = 90% a) (i) Number of peppers sold $= \frac{90}{100} \times 600$ $= 540$ (ii) Number of peppers given away = Number of peppers harvested − Number of peppers sold = 600 – 540 = 60 **OR** Percentage sold = 90% The percentage given away = (100 – 90)% = 10% Number given away $= \frac{10}{100} \times 600$ $= 60$ b) Peppers are sold at 5 for \$8.00. Number of peppers sold = 540 Number of "groups" of 5 in 540 $= \frac{540}{5}$ $= 108$ Each "group" is sold for \$8.00. The amount of money acquired = \$8.00 x 108 = \$ 864				

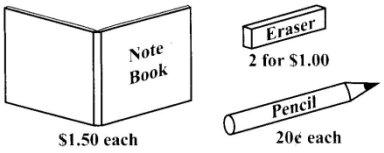
By Fayad W. Ali and Shereen A. Khan.

No.	TEST ITEMS	WORKING COLUMN	*Do Not Write Here*		
				KC	AT	PS
43.	Ms. Brown borrowed \$1200 at 20% simple interest for 2 years. a) How much interest did she pay? **Answer: \$480** b) How much money did she repay ALTOGETHER? **Answer: \$1680** c) Ms. Brown repaid the TOTAL amount in EQUAL monthly payments. How much did she pay EACH month? **Answer: \$70**	a) Principal = \$1200 Rate = 20% per annum Time = 2 years Simple Interest $= \frac{\text{Principal} \times \text{Rate} \times \text{Time}}{100}$ $= \frac{\$1200 \times 20 \times 2}{100}$ $= \$480$ b) Amount to be repaid = Principal + Simple interest = \$1200 + \$480 =\$1680 c) Number of months in 2 years $= 12 \times 2$ $= 24$ Amount to be paid each month $= \frac{\text{Total to be repaid}}{\text{Number of months}}$ $= \frac{\$1680}{24}$ $= \$70$				

By Fayad W. Ali and Shereen A. Khan.

No.	TEST ITEMS	WORKING COLUMN	*Do Not Write Here*		
				KC	AT	PS

44. The pictures below show the cost of notebooks, erasers and pencils.



Use the information to complete the table below:

	Number of Items			Total Cost
	Note-books	Erasers	Pencils	
(a)	3	6	15	$10.50
(b)	3	5	15	$10

a) Cost of 3 notebooks at $1.50 each
$= \$1.50 \times 3$
$= \$4.50$

Cost of 1 eraser $= \dfrac{\$1.00}{2}$
$= 50¢$

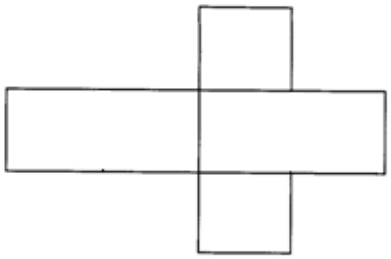
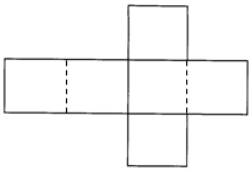
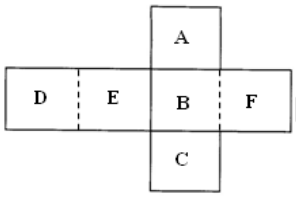
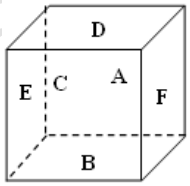
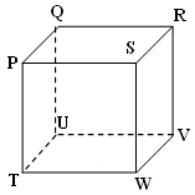
Cost of 6 erasers at $0.50 each
$= \$0.50 \times 6$
$= \$3.00$

Cost of 15 pencils at $0.20 each
$= \$0.20 \times 15$
$= \$3.00$

Total cost of 3 notebooks, 6 erasers and 15 pencils
$= \$4.50 + \$3.00 + \$3.00$
$= \$10.50$

b) We know that
Cost of 3 notebooks at $1.50 each
$= \$1.50 \times 3 = \$4.50$
Cost of 15 pencils at 20¢ each
$= 20¢ \times 15 = \$3.00$
The total spent on pencils and notebooks
$= \$4.50 + \$3.00 = \$7.50$
The amount spent on erasers
= The amount spent in all – amount spent on pencils and notebooks
$= \$10.00 - \$7.50$
$= \$2.50$
Number of erasers bought
$= \dfrac{\text{Amount spent on erasers}}{\text{Cost of 1 eraser}}$
$= \dfrac{\$2.50}{\$0.50}$
$= 5$

By Fayad W. Ali and Shereen A. Khan.

No.	TEST ITEMS	WORKING COLUMN	*Do Not Write Here*		
				KC	AT	PS
45.	**Item 45** refers to the figure below.  a) Draw TWO lines on the figure above so that it forms the net of a solid. b) Name the solid formed when the net is folded. **Answer: Cube** c) The solid formed has 12 edges and 8 vertices.	a)  The two lines, shown dotted, will complete the net of a solid. b)  The faces A, B, C, D, E and F are named for convenience. When folded, the figure obtained is a cube.  c)  The solid formed has 4 edges on the base, 4 edges on the top, 4 vertical edges on the sides 4+4+4 = 12 edges The solid has 8 vertices – these are labelled P, Q, R, S, T, U, V and W, as shown.				

By Fayad W. Ali and Shereen A. Khan.

No.	TEST ITEMS	WORKING COLUMN	*Do Not Write Here*			
				KC	AT	PS
46.	The points scored by Sam for 5 games are given in the table below. **Game 1**: 34 **Game 2**: 29 **Game 3**: 43 **Game 4**: 34 **Game 5**: 55 a) What is the modal number of points scored? **Answer: 34** b) Calculate the mean number of points scored for a game. **Answer: 39 points** c) His mean score for 6 games was 42. Calculate his score on Game 6. **Answer: 57 points**	a) The modal number of points earned is 34 since this occurred more times than any other score. b) Mean number of points $= \frac{\text{Total number of points}}{\text{Number of games}}$ $= \frac{34+29+43+34+55}{5}$ $= \frac{195}{5}$ $= 39$ points c) The mean score for 6 games is 42. Total number of points after 6 games = Mean score×Number of games $= 42 \times 6$ $= 252$ points Score on the 6th game = Total score after the 6th game – Total score after the 5th game $= 252 - 195$ $= 57$ points				

By Fayad W. Ali and Shereen A. Khan.