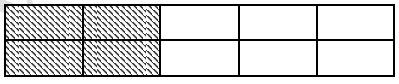
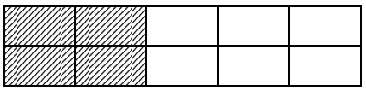
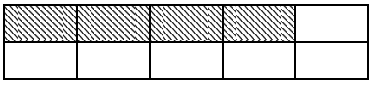
FAS-PASS
Maths

SEA MATHS 2013

SECTION 1

No.	TEST ITEMS	WORKING COLUMN	*Do Not Write Here*		
				KC	AT	PS
1.	Write in figures: Nine hundred and five thousand and twelve. **Answer: 905 012**	Nine hundred and five thousand = 905 000 + Twelve = 12 Total = 905 012				
2.	**SUBTRACT:** 1509 − 846 _____ **Answer: 663**	$\not{1}^{14}\not{5}^{1}09$ − 8 4 6 6 6 3				
3.	Express 25% as a fraction in its LOWEST terms. **Answer: $\frac{1}{4}$**	25 percent OR 25 per hundred OR 25 hundredths $= \frac{25}{100}$ $\frac{25 \div 25}{100 \div 25} = \frac{1}{4}$				
4.	Shade $\frac{2}{5}$ of the shape below.  **Answer:** 	The shape is large rectangle divided into 10 equal smaller rectangles. 1 whole = 10 equal parts $\frac{2}{5}$ of the whole $= \frac{2}{5}$ of $10 = \frac{2}{5} \times 10 = 4$ If we shade any four rectangles, then $\frac{2}{5}$ of the shape will be shaded. For example:  OR 				

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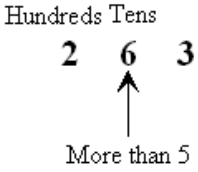
5.	**MULTIPLY:** 6.03×0.04 **Answer: 0.2412**	$6.03 = 6\frac{3}{100} = \frac{603}{100}$ $0.04 = \frac{4}{100}$ $6.03 \times 0.04 = \frac{603}{100} \times \frac{4}{100}$ $= \frac{603 \times 4}{100 \times 100} = \frac{2412}{10\,000} = 0.2412$				
6.	Write the number 263 to the NEAREST hundred. **Answer: 300**	Since we are rounding to the nearest hundred we do not want any digits whose place values are lower than hundreds in our answer.  Our decision to round up to 300 or round down to 200 depends on the value of the **tens** digit. This digit, 6, is more than 5. Therefore, we round up by adding 100 to 200 to obtain 300. **Note**: If the tens digit was less than 5, we would round down to 200.				
7.	Complete the sequence below by filling in the missing fraction in the box. $\frac{1}{3}, \frac{3}{6}, \boxed{\mathbf{\frac{5}{9}}}, \frac{7}{12}$	$\frac{1}{3}, \frac{3}{6}, \boxed{\ \ }, \frac{7}{12}$ **Consider the numerators**, 1, 3, ?, 7. Each number is 2 more than the number before. So, the missing number is 5. **Consider the denominators**: 3, 6, ?, 12 Each number is 3 more than the number before. So, the missing number is 9. Hence, the missing fraction is: $\frac{5}{9}$				

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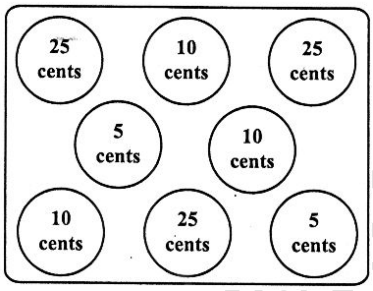
8.	A netball team played 16 games. The team lost 3 games, drew 1 and won the others. What percentage of games did they win? **Answer: 75%**	The number of games played = 16 The number of games lost = 3 The number of games drawn = 1 The remainder of the games was won. Therefore, the number of games that was won $= 16 - (3 + 1) = 16 - 4 = 12$ The percentage of the games that was won $= \frac{\text{Number of games won}}{\text{Number of games played}} \times 100$ $= \frac{12}{16} \times 100$ $= 75\%$				
9.	Amy has the coins shown in the diagram below.  What is the TOTAL value of all the coins? **Answer: \$1.15**	The coins shown in the diagram consists of 3 of 25¢, 3 of 10¢ and 2 of 5¢. The value of 3 of 25¢ coins $= 25¢ \times 3 = 75¢$ The value of 3 of 10¢ coins $= 10¢ \times 3 = 30¢$ The value of 2 of 5¢ coins $= 5¢ \times 2 = 10¢$ Hence, the total value of the coins listed in the diagram = $75¢$ $30¢ +$ $10¢$ $115¢$ $115¢ = \$1.15$				
10.	5.08 kilometres = _____metres **Answer** 5.08 kilometres = **5 080** metres	1 kilometre = 1000 metres Therefore, 5.08 kilometres, expressed in metres, is $= 5.08 \times 1000$ metres = 5 080 metres				

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11.	Allan sets out to run three laps without stopping. He starts at 10:15 a.m. and each lap takes 15 minutes. At what time does he finish? **Answer: 11:00 a.m.**	Each lap takes 15 minutes. Therefore 3 laps will take a total of $15 \times 3 = 45$ minutes The start time = 10:15 a.m. Therefore, the end time will be $10:15 +$ $\underline{00:45}$ $\underline{11:00}$ Allan finishes the laps at 11:00 a.m.				
12.	A bag of flour weighs 4.1 kg and a bag of corn meal weighs 3985 g. By how much is one bag heavier than the other? **Answer: 115 g**	The weight of the bag of flour = 4.1 kg $= 4.1 \times 1000\,\text{g}$ (1 kg = 1 000 g) = 4100 g The weight of the bag of corn meal = 3985 g 4100 is a larger number than 3985. The difference in weight between the bag of flour and the bag of corn meal, in g is, $4\,100 - 3985 = 115$ The difference in weight is 115 g, with the bag of flour being the heavier one.				
13.	How many pieces of string 25 cm long can be cut from a piece of string of length 2 m? **Answer: 8 pieces**	The length of the original piece of string = 2 m Therefore, the length of the original piece of string, in cm, is $= 2 \times 100\,\text{cm} = 200$ cm (1 m = 100 cm) The length of each smaller piece of string that is to be cut = 25 cm. Hence, the number of smaller pieces that can be cut from the length is $= \frac{\text{Length of the original piece of string}}{\text{Length of each small piece}}$ $= \frac{200}{25}$ $= 8$ pieces				

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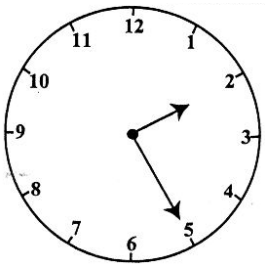
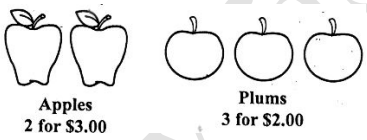
14.	The clock shown below is 25 minutes slow.  To which number should the longer hand point to show the correct time? **Answer: 10**	There are 12 equal intervals of 5 minutes each on the clock face. If the clock is 25 minutes slow, then it should be $\frac{25}{5}=5$ intervals away from where it should have been. The longer hand points to 5 (as shown) and should point to the number that is 5 intervals away from 5, moving clockwise. It will end up at the number 10 (5+5). **OR** One can start at the number 5 and move in a clockwise direction, counting in five-minute intervals to end at 25 minutes. …..6 7 8 9 10 ↑ ↑ ↑ ↑ ↑ 5 10 15 20 25m The ending position will be at 10. **Note that the shorter or hour hand should be drawn closer to the middle of the two numbers, 2 and 3.**				
15.	Maya buys some of the apples and plums advertised below.  Apples 2 for $3.00 Plums 3 for $2.00 She buys 4 apples and pays with a $10.00 bill. How many plums can she buy with the remainder of the money? **Answer: 6 plums**	2 apples cost $3.00. 4 apples will therefore cost twice as much $2\times\$3.00=\$6.00$ The change from $10.00 will be $\$10.00-\$6.00=\$4.00$ Maya has $4 to buy plums For $2, Maya can buy 3 plums For $4 Maya can buy $3\times2=6$ plums.				

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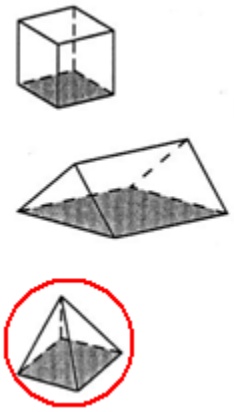
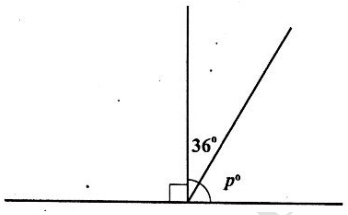
16.	Circle the pyramid from the set of solids below. 	Pyramids have a point called an apex. The base of a pyramid is not uniform unlike the base of a prism. The first solid is a cube. It has a square base that is uniform throughout its height.. The second solid is a triangular prism. It has a triangular base that is uniform throughout its height (or length in this case). The third shape a square based pyramid. Its square base is non-uniform as it changes in size, getting smaller and smaller until it reaches its apex. It is therefore the one to be circled. 				
17.	The diagram below shows three angles.  Calculate the value of p. **Answer: 54**	The straight line is divided into three angles. The sum of all three angles a straight line is 180°. The sum of the two given angles = 90° + 36° = 126° Therefore, the size of the remaining angle = 180° - 126° = 54° **The value of p should only be the numerical value of 54.**				

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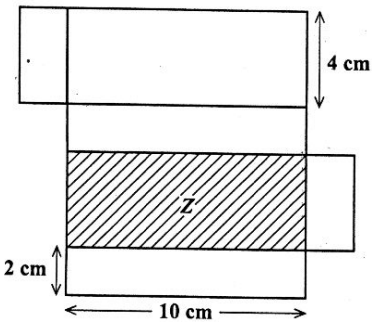
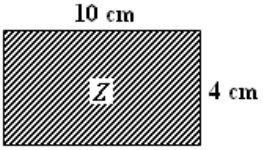
18.	The diagram below shows the net of a cuboid.  What is the area of the shaded face, *Z*? **Answer:40 cm^2**	The face Z, shown shaded, is a rectangle 4 cm wide and 10 cm long.  The area of a rectangle = length × width The area of the rectangle, Z $=10\times 4$ $=40\ \text{cm}^2$				
19.	The table below shows Adam's cricket scores for five days in a week. **Days of the Week** / **Cricket Scores** Monday: 9 Tuesday: 11 Wednesday: 17 Thursday: 28 Friday: 15 Calculate his mean score for that week. **Answer: 16**	The mean Score $=\dfrac{\text{Total Score}}{\text{Number of Scores}}$ $=\dfrac{9+11+17+28+15}{5}$ $=\dfrac{80}{5}$ $=16$				

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SECTION II						
No.	**TEST ITEMS**	**WORKING COLUMN**	***Do Not Write Here***			
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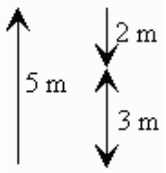
21.	Ian doubles a certain number and then adds 6. The result is 24. What is the number? **Answer: 9**	To find the number we start with the answer and work backwards reversing the operations along the way. To get 24, Ian **added** 6 to some number. So, $24 = ? + 6$, hence, we **subtract** 6 from 24 to get $24 - 6 = 18$. Hence, the number was18 before. But Ian doubled (**multiplied** by 2) some number to get 18 So, $18 = ? \times 2$ Hence, we **divide** 18 by 2 to get $18 \div 2 = 9$ The original number is therefore, 9.				
22.	Susan had gained 20 points for being neat and tidy. On Friday, she lost 10% of these points for untidy work. How many points did she have left? **Answer: 18 point**	The number of points gained by Susan = 20 The percentage of the total points lost = 10% Therefore, the number of points lost $= \frac{10}{100} \times 20$ $= 2$ The number of points Susan now has left $= 20 - 2 = 18$				
23.	Jack tried to climb 20 m up a coconut tree. For every 5 m he climbed, he fell back 2 m. How far up the tree would he have reached after falling 3 times? **Answer: 9 m**	Jack falls back 2 m for every 5 m climbed. Hence, after every fall Jack will be $5 - 2 = 3$ metres further up the tree.  After falling from the tree 3 times, Jack would be $3 \times 3 = 9$ metres up the tree. **The words slipped or slided is more appropriate than the word fell in this context.** **Also, the 20m information is irrelevant in the question.**				

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24.	Dad had a piece of rope that was $4\frac{3}{4}$ m long. He cut $3\frac{1}{2}$ m of it to make a swing. What is the length of the remaining piece of rope? **Answer: $1\frac{1}{10}$ m**	The original length of the rope = $4\frac{3}{4}$ m The length of the piece that was cut off = $3\frac{1}{2}$ m The remaining length of rope is: $4\frac{3}{5}-3\frac{1}{2}$ $1\frac{2(3)-5(1)}{10}=1\frac{1}{10}$ m				
25.	Mr. Singh planted a tree. Each week, the tree grew by 0.24 m. How many weeks did the tree take to grow 6 m? **Answer: 25 weeks**	The growth of the tree per week = 0.24 m To grow a total of 6 m, the time taken would be $\frac{6}{0.24}$ weeks. $\frac{6}{\frac{24}{100}}=\frac{6\times 100}{24}=25$ weeks				
26.	Jasmine went to the market and purchased 32 fruits consisting of 6 apples, some oranges and some guavas. She purchased twice as many oranges as apples. She recorded her purchase as shown in the table below. a) Complete the table. (i) (ii) **Fruit** / **Number Purchased** Apple: 6 Oranges: 12 Guavas: 14 Total: 32 b) What percentage of the fruits purchased was apples? **Answer: $18\frac{3}{4}$%**	a) The total number of fruits bought = 32 The number of apples bought = 6 The number of oranges bought is twice the number of apples. i. The number of oranges bought $2\times 6=12$ ii. The total number of apples and oranges bought = 6 + 12 = 18 Therefore, the number of guavas bought will be $32-18=14$ b) The percentage of apples purchased $=\frac{\text{Number of apples}}{\text{Total number of fruits}}\times 100$ $=\frac{6}{32}\times 100=\frac{600}{32}$ $=\frac{75}{4}$ $=18\frac{3}{4}\%$				

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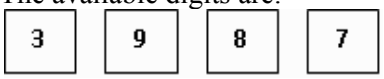
26.	Four digits are shown below.  Using EACH digit only ONCE, write the a) SMALLEST four-digit number **Answer: 3 789** b) LARGEST four-digit EVEN number **Answer: 9 738**	a) The available digits are:  To find the smallest 4-digit number, the digits need to be arranged in ascending order of size, 3, 7, 8 and 9. Therefore, the smallest four-digit number = 3 789 b) For the number to be even, it can only end in 8. Therefore, the 4th or units digit is 8. The remaining three digits 3, 7 and 9 must now be arranged from the largest to the smallest. This is 9, 7 and 3. Therefore, the largest even number ending in 8 will be 9 738				
28.	The product of two numbers is 9. One of them is $3\frac{3}{5}$. What is the other number? **Answer: $2\frac{1}{2}$**	The product of the two numbers = 9 One of the numbers is $3\frac{3}{5}$. Therefore, $3\frac{3}{5}\times$ the other number = 9 The other number $= 9 \div 3\frac{3}{5}$ $= 9 \div \frac{18}{5}$ $= \frac{9}{1} \times \frac{5}{18}$ $= \frac{5}{2}$ or $2\frac{1}{2}$				

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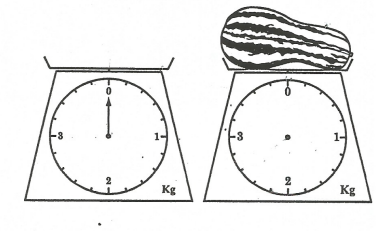
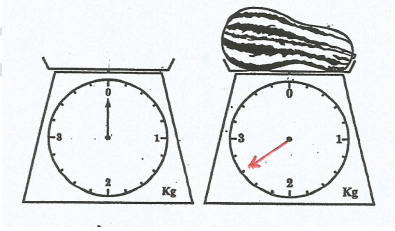
29.	Sam bought 2 snacks at 65¢ each and 1 drink for \$1.25. What is his change from a \$5 note? **Answer: \$2.45**	The cost of 2 snacks at 65¢ each $= \$0.65 \times 2 = \$1.30$ + The cost of 1 drink $= \underline{\$1.25}$ Total $= \underline{\$2.55}$ Change received from \$5.00 $= \$5.00 - \$2.55$ \$5.00 −\$2.55 \$2.45				
30.	A pumpkin weighing 2.6 kilograms is placed on the scale below.  a) Draw the new position of the pointer when the pumpkin is placed on the scale. b) How many GRAMS does the pumpkin weigh? **Answer:** **(a)**  **(b) 2 600 g**	a) When the pumpkin is placed on the scale, the pointer should point to the weight of 2.6 kilograms, which is the weight of the pumpkin. There are 5 intervals between each number on the scale. Each interval therefore represents $\frac{1}{5}$ kg or 0.2 kg. So, 0.6 kg will be represented by 0.6 ÷ 0.2 = 3 intervals Counting the intervals after 2kg, we have: 2.0, 2.2, 2.4, 2.6, … 1 2 3 The pointer should therefore point to 3 intervals after the number 2 on the scale, as shown. b) 1 kg = 1000 g Therefore 2.6 kg = 2.6 × 1000 grams = 2 600 grams The pumpkin weighs 2 600 g.				

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31.	A table and four chairs together cost \$540. The cost of each chair is \$70. Calculate the cost of the table. **Answer: \$260**	The cost of 1 chair = \$70 The cost of 4 chairs $= \$70 \times 4$ $= \$280$ The cost of 1 table and 4 chairs = \$540 The cost of 1 table + \$280 = \$540 The cost of 1 table = \$540 − \$280 \$540 −\$280 \$260 The cost of 1 table = \$260				
32.	Tom works for eight hours each day and is paid \$12 per hour. a) If he works for five days, calculate the total amount he is paid. **Answer: \$480** b) When Tom works on Saturdays, he is paid per hour at $1\frac{1}{2}$ times the week-day rate. How much is Tom paid per hour on a Saturday? **Answer: \$18**	a) Tom works 8 hours each day. In 5 days, Tom would have worked for $5 \times 8 = 40$ hours. Tom's pay = His hourly pay × the number of hours worked $= \$12 \times 40$ $= \$480$ b) Tom's hourly pay on Saturday $= 1\frac{1}{2} \times \$12$ per hour $= \$18$				

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33.	The cost price of a television is \$1200. VAT is calculated at 15% of the cost price. a) Calculate the amount of VAT. **Answer: \$180** b) Calculate the TOTAL amount that a customer pays for the television. **Answer: \$1380** c) Larry bought one of the televisions but later sold it for \$980. Calculate his loss as a percentage of the cost price. **Answer:** $28\frac{68}{69}$**%** if Larry paid VAT **Answer:** $18\frac{1}{3}\%$ If Larry did not pay VAT	a) VAT = 15% of the cost price $= \frac{15}{100} \times \$1200$ $= \$180$ b) Amount a customer will pay for the television = Cost price + VAT = \$1200 + \$180 = \$1380 c) The selling price of \$980 is less than the price paid of \$1380. The loss = Price paid – Selling price =\$1380 - \$ 980 = \$400 Loss as a percentage of the cost price. We must interpret the cost price as Larry's cost price $= \frac{\text{Loss}}{\text{Cost Price}} \times 100$ $= \frac{\$400}{\$1380} \times 100$ $= 28\frac{68}{69}\%$ **The price of \$1200 is really the 'marked price'. The cost price for the customer is the price plus VAT.** **However, candidates were told that the cost price was \$1200 and so it may be assumed that Larry did not pay VAT. In such a case, Larry's loss will be:** **\$1 200 - \$980 = \$220** **His loss percent will be:** $\frac{\$220}{\$1200} \times 100\%$ $= 18\frac{1}{3}\%$				

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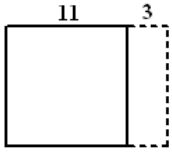
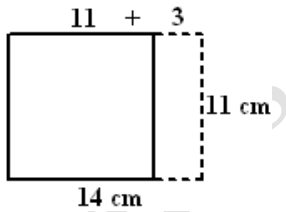
34.	The side of a square is 11 cm. a) What is the area of the square? **Answer: 121 cm^2** b) What is the perimeter of the same square? **Answer: 44 cm** c) Two sides of the square are extended by 3 cm as shown below.  What is the area of the NEW shape? **Answer: 154 cm^2**	a) Length of side of square = 11 cm Area = Side × Side = 11 × 11 = 121 cm^2 b) Perimeter of Square $= \text{Side} \times 4$ $= 11 \text{ cm} \times 4$ $= 44 \text{ cm}$ c)  The new figure is a rectangle which is 11 cm wide and 11 + 3 = 14 cm long. Area of the rectangle = length ×width $= 14\text{cm} \times 11\text{cm}$ = 154 cm^2				
35.	$8.25 was shared between Pam and her sister Rita in proportion to their ages. Pam is 12 years old and Rita is 8 years old. a) Express their ages as a ratio in its SIMPLEST form. **Answer: 3:2** b) Calculate the amount of money each girl receives. **Answer: Pam receives $4.95** **Rita receives $3.30**	a) Pam is 12 years old. Rita is 8 years old. Pam's age to Rita's age is 12 to 8. Divide by 4 we get 3 to 2, which is written as $3:2$ b) The amount of money to be shared is $8.25. The total number of shares is considered as 2 + 3 = 5 Pam receives 3 shares and Rita 2 shares Pam would receive $\frac{3}{3+2} = \frac{3}{5}$ of the total share. $\frac{3}{5} \times \$8.25 = \$4.95$ Rita would receive $\frac{2}{3+2} = \frac{2}{5}$ of the share. $\frac{2}{5} \times \$8.25 = \$3.30$				

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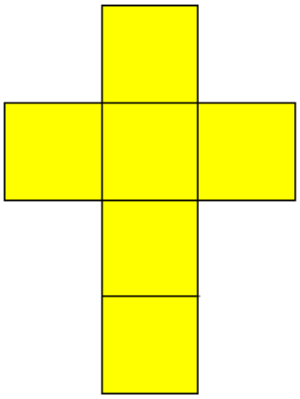
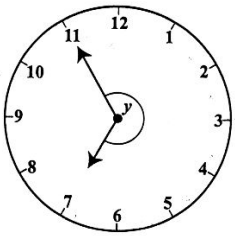
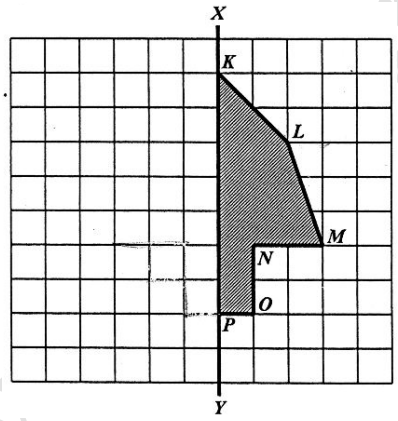
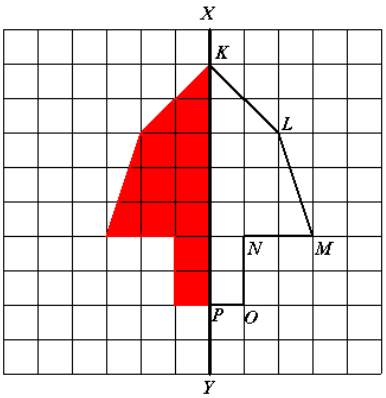
36.	a) Draw the net of a cube in the space provided below. b) Complete the table below. **Shape** | **Edges** | **Vertices** | **Faces** Cube | **12** | 8 | 6	a) There are several possible nets of a cube that can be drawn. The net should always consist of 6 squares arranged in a manner that can be folded to form a cube. One such net is drawn for the answer.  b) The number of edges in a cube is 12. The completed table is: Shape | Edges | Vertices | Faces Cube | 12 | 8 | 6				

No.	TEST ITEMS	WORKING COLUMN	Do Not Write Here			
				KC	AT	PS
37.	The angle formed between the hands of the clock shown below is marked with 'y'.  a) Circle the term below that BEST describes angle y. Right angled Acute Obtuse (Reflex) b) Complete the following statement. Angle *y* measures **240** degrees	a) Angle *y* is more than 180° and is therefore reflex. b) The circle is divided equally into twelve angles at the centre. The angle between any two numbers next to each other is $\frac{360°}{12} = 30°$. The number of 30^0 angles between 11 and 7 is 8. Angle $y = 30^0 \times 8$ $= 240°$ **It is important to realise that the hands of a real working clock cannot point to 11 and 7 exactly at the same time.**				
38.	 Draw the image of the shape KLMNOP such that XY is a line of symmetry.	The completed shape will also occupy the same positions on the left hand side of the line XY as does the points L, M, N and O. By locating the image of each of these points we can draw the image of the entire shape. It is illustrated in red in the diagram shown below. 				

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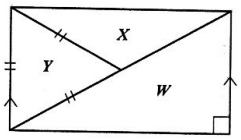
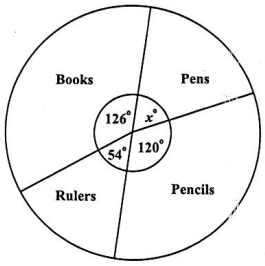
No.	TEST ITEMS	WORKING COLUMN	*Do Not Write Here* KC	AT	PS
39.	The diagram below shows three triangles labelled W, X and Y. The line segments marked with the double strokes (‖) are equal in length.  a) Which triangle is i. Right-angled? **Answer: W** ii. equilateral? **Answer: Y** b) What type of quadrilateral is the whole figure (W, X and Y combined)? **Answer: Rectangle**	a) i) The right-angled triangle is *W* since one of its angles is a right angle. ii) In triangle *Y*, all the sides are equal. Triangle *Y* is therefore equilateral. b) The figure is a rectangle. Note that the proof involves the properties of parallel lines and is beyond the scope of the primary curriculum.			
40.	The pie chart below shows how a budget of \$540 was spent on certain school supplies.  How many dollars were spent on pens? **Answer: \$90**	The circle is divided into 4 sectors. The angles of three of the sectors are 126°, 54° and 120°. The sum of these three angles is $126° + 120° + 54° = 300°$ The sum of all the angles at the centre of a circle is 360^0 Hence, the angle of the sector representing pens is $= 360° - 300° = 60°$ Therefore, the fraction of the pie chart representing the amount spent on pens is $\frac{60°}{360°} = \frac{1}{6}$. A total of \$540 was spent. The amount of money spent on pens is $\frac{1}{6} \times \$540 = \$90$			

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SECTION III					
No.	**TEST ITEMS**	**WORKING COLUMN**	***Do Not Write Here***		
				KC	AT	PS
41.	Mr. Green bought a box of mangoes. 60% were ripe, 25% were green and the remainder had to be thrown away. The box contained 300 mangoes. a) How many mangoes were ripe? **Answer: 180** b) How many mangoes had to be thrown away? **Answer: 45** c) Mr. Green paid \$60 for the box of mangoes. Calculate the amount of money he lost. **Answer: \$9**	a) 60% of the total number of mangoes were ripe The number of ripe mangoes $\frac{60}{100} \times 300$ $= 180$ b) 60% were ripe and 25% were green Hence, ripe and green mangoes together total 60% + 25% = 85% The whole consists of 100%. The remainder = 100% − 85% = 15% Therefore, 15% of the mangoes were thrown away. The number of mangoes thrown away $= \frac{15}{100} \times 300$ $= 45$ c) We may assume that Mr. Green would have lost money because he threw away some mangoes. Since 15% were thrown away, his loss can be 15% of \$60. $= \frac{15}{100} \times \$60$ $= \$9$ **The question did not mention what Mr. Green did with the mangoes. To incur a loss, he must sell the mangoes at a price lower that his cost.** **Since there is no information on his selling price, we cannot assume that he had a loss.**				

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No.	TEST ITEMS	WORKING COLUMN	*Do Not Write Here*		
				KC	AT	PS
42.	There are 168 students in a school. There are twice as many girls as there are boys. a) Calculate the number of girls in the school. **Answer: 112** b) The students are to be divided into 7 classes so that each class has the same number of girls and the same number of boys. Calculate the number of girls and the number of boys in EACH class. **Answer: 16 girls** **8 boys** c) Apples are sold in boxes each containing one dozen. How many boxes will the teacher have to buy so that EACH student receives ONE apple? **Answer: 2 boxes per class OR 14 boxes for the entire school.**	a) We can represent the number of students in school as follows: 168 There are twice as many girls as there are boys. Girls | Girls | Boys $\frac{2}{3}$ of the school's population are girls, so the number of girls is $\frac{2}{3} \times 168 = 112$ b) 168 students comprise 112 girls and168 – 112 = 56 boys. The 112 girls and 56 boys are divided equally into 7 classes. $7\overline{)112}$ $\quad$ $7\overline{)56}$ 16 $\quad$ 8 Hence each class will have 16 girls and 8 boys. c) Each of 168 students receives 1 apple. Each box has 1 dozen or 12 apples. In each class there are 16 + 8 =24 students. Number of boxes of apples required per class is $24 \div 12 = 2$ For the entire school, the number of boxes is $7 \times 2 = 14$ **Part (b) would have been clearer if stated as follows:** **The boys are equally divided among the 7 classes and the girls are also equally divided among the 7 classes.** **Also, in part (c), one is unsure as to whether the teacher bought apples for a class of 24 or for the entire school population of 168.**				

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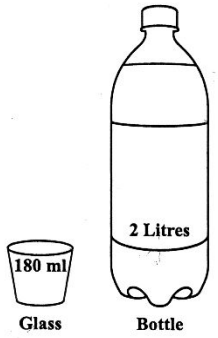
No.	TEST ITEMS	WORKING COLUMN	*Do Not Write Here*		
				KC	AT	PS
43.	The bottle in the diagram holds 2 litres of soda when full.  Jita fills 4 glasses with 180 ml of soda. a) How many litres of soda are left in the bottle? **Answer: 1.28 litres** b) How many MORE full glasses can she pour from the remaining soda? **Answer: 7 glasses**	a) 4 glasses each hold 180 ml The total amount of soda in all 4 glasses $= 180 \times 4 = 720$ ml The amount of soda left in the bottle $= 2\text{ l} - 720\text{ ml}$ $= (2 \times 1000) - 720\text{ ml}$ $= 1280\text{ ml}$ The amount in litres $= \frac{1280}{1000}$ $= 1.28$ litres b) Number of glasses that can be poured from the remaining soda $= \frac{\text{Volume of soda remaining}}{\text{Volume of soda in 1 glass}}$ $= \frac{1280}{180}$ $= 7\ R\ 20ml$ Hence, 7 full glasses can be poured from the remaining soda and there will be 20 ml of soda left in the bottle. **Although a diagram was provided, the question would have been free from ambiguity if stated as follows:** Jita filled 4 glasses, each holding 180 ml of soda. **Some candidates may assume that the total poured into all 4 glasses was 180 ml. The number of ml left will now be** **$2000 - 180 = 1720$ ml** **$= 1.72$ litres** **In this case one glass would hold $180 \div 4 = 45$ ml each.** **The number of glasses that can now be filled would will be** **$1720 \div 45 = 38$.**				

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

44. The price list in a cafeteria is shown below.

Price List	
Hot dog	\$5.50
Drink	\$2.25
Apple	\$1.75

Sean bought 2 hot dogs, a drink and 2 apples. Sade bought a hot dog, 3 drinks and an apple.

a) What is the TOTAL amount spent by Sean and Sade?

Answer: \$30.75

b) How much more than Sade did Sean spend?

Answer: \$2.75

c) Which item(s) can be bought with the difference in the amount spent by Sean and Sade?

Answer: An apple or a drink

a) The cost of Sean's items is:
2 hot dogs: \$5.50 × 2 = \$11.00
1 drink: = \$ 2.25
2 apples: \$1.75 × 2 = \$ 3.50
The total spent by Sean = \$16.75

The cost of Sade's items is
1 hot dog = \$5.50
3 drinks: \$2.25 × 3 = \$6.75
1 apple: = \$1.75
The total spent by Sade = \$14.00

The total spent by both Sean and Sade
= \$16.75 +
\$14.00
\$30.75

b) Sean spent more than Sade. The difference is \$16.75 - \$14.00
\$16.75 –
\$14.00
\$ 2.75

c) For \$2.75, either an apple costing \$1.75 or a drink costing \$2.25 can be bought, no other item can be bought.

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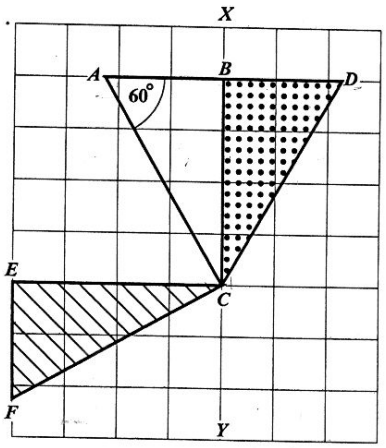
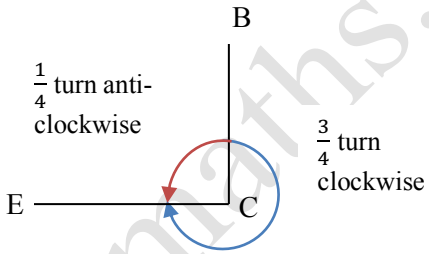
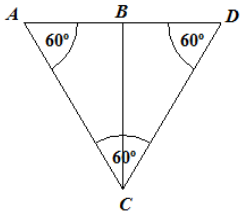
No.	TEST ITEMS	WORKING COLUMN	*Do Not Write Here* KC	AT	PS
45.	The positions of triangles ABC, DBC and FEC are shown below.  a) What term is used to describe the movement of triangle ABC to the position of triangle FEC? **Answer: a $\frac{1}{4}$ turn in an anti-clockwise direction OR a $\frac{3}{4}$ turn in a clockwise direction.** b) The triangle ABC moves to the position of triangle BDC. Describe the movement fully. **Answer: Reflection in the line BC** c) What type of triangle is the combined shape, triangle ADC? **Answer: Equilateral**	a) Triangle ABC was moved to triangle FEC. Consider the line BC and its new position EC. The movement can be described as either: • A quarter turn in an anti-clockwise direction OR • A three-quarter turn in a clockwise direction as shown in the diagram below.  b) Triangle ABC is moved to triangle DBC. The movement is **supposed** to be a reflection in the line BC. c)  In triangle ABC, the angles at A and at B are both 60^0. Hence, the third angle, at C, would also be 60^0. Therefore, the triangle ABC is best described as equilateral. **NOTE: There is no transformation or even a combination of transformations that could move triangle ABC to BDC. The triangle should be named DBC. Only then is it a reflection.**			

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

46. The heights of a group of students in Standard 1 are given in the table below.

Name of Student	Amina	Betty	Jon	Avi	Ela	Sunil
Height (cm)	75	64	84	86	47	64

a) What is the modal height?

Answer: 64 cm

b) Calculate the mean height of the group.

Answer: 70 cm

c) Amina left the group. What is the mean height of the new group?

Answer: 69 cm

a) A table of the information is made.

Height	Number of Students
47	1
64	2
75	1
84	1
86	1

The modal height is therefore 64 cm, since it occurred twice and all the other heights occurred only once.

b) Mean height

$$= \frac{\text{Total height}}{\text{Total number of students}}$$

$$= \frac{75+64+84+86+47+64}{6}$$

$$= \frac{420}{6}$$

$$= 70 \text{ cm}$$

c) When Amina left, the new total height = 420 – 75 = 345 cm

The new number of students = 6 – 1 = 5

The new mean = $\frac{\textit{New Total}}{\textit{New number of students}} = \frac{345}{5}$

= 69 cm

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