CATHOLIC HIGH SCHOOL

PRELIMINARY EXAMINATION (2019)

PRIMARY SIX

MATHEMATICS

PAPER 1

(BOOKLET A)

Name : _____ ( )

Class : Primary 6 _____

Date : 27 August 2019

Total Time for Booklets A and B: 1 hour

15 questions

20 marks

INSTRUCTIONS TO CANDIDATES

Do not turn over this page until you are told to do so.

Follow all instructions carefully.

Answer all questions.

Shade your answers in the Optical Answer Sheet (OAS) provided.

The use of calculators is **NOT** allowed.

Questions **1** to **10** carry 1 mark each. Questions **11** to **15** carry 2 marks each. For each question, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the oval (1, 2, 3 or 4) on the Optical Answer Sheet. All diagrams are not drawn to scale. (20 marks)

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1. What does the digit 7 in 65.47 stand for?

   (1) 7 tens

   (2) 7 tenths

   (3) 7 hundreds

   (4) 7 hundredths

---

2. How many sixths are there in $3\frac{5}{6}$?

   (1) 5

   (2) 18

   (3) 23

   (4) 33

---

3. Justin attended an enrichment class for 1 h 55 min. He left the class at 5 p.m. What time did he arrive at the enrichment class?

   (1) 3.05 p.m.

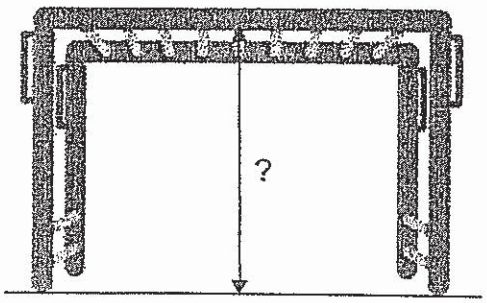
   (2) 3.55 p.m.

   (3) 4.05 p.m.

   (4) 6.55 p.m.

---

4. Which one of the following is likely to be the height of the monkey bars measuring from the bar to the ground?



(1) 0.02 m

(2) 2 m

(3) 0.20 m

(4) 20 m

---

5. What is the value of $\frac{10y}{3} - 2y + 1$ when $y = 3$?

(1) 9

(2) 5

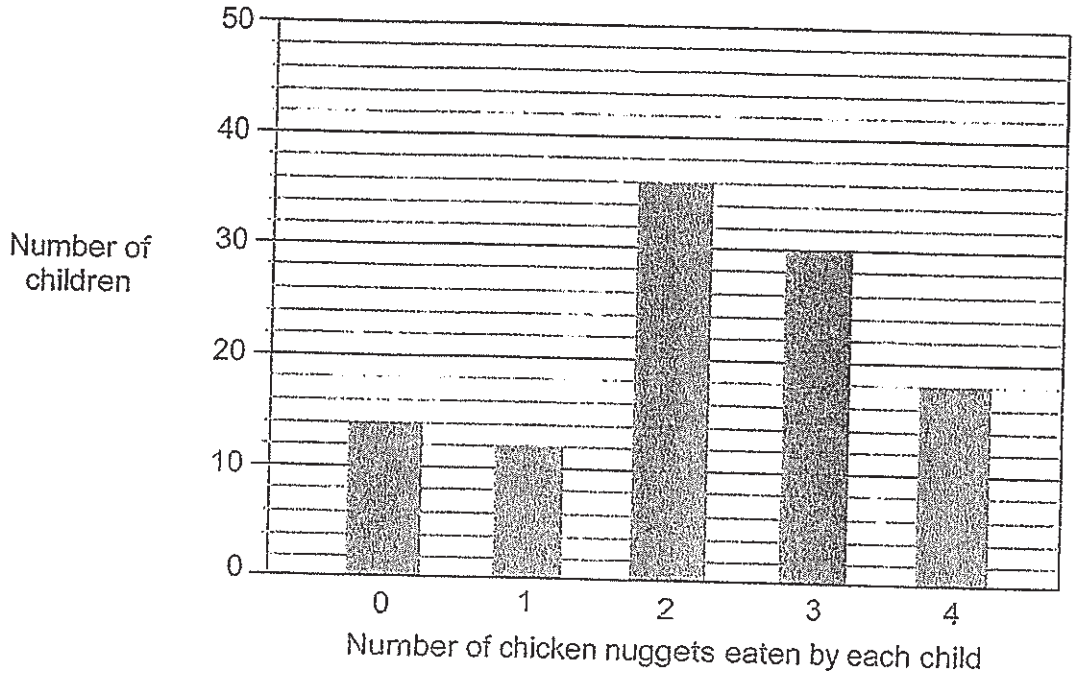
(3) 3

(4) 4

---

*Use the information below to answer Questions **6** and **7**.*

The graph shows the number of chicken nuggets eaten by each child at a party.



6. How many children ate 2 or more chicken nuggets each?

(1) 36

(2) 48

(3) 66

(4) 84

---

7. How many more children ate chicken nuggets than those who did not?

(1) 14

(2) 81

(3) 82

(4) 96

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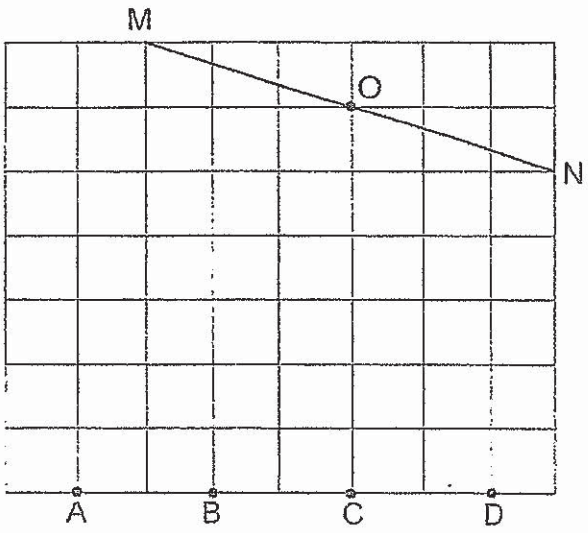
8. A,B,C,D and O are points on a square grid. Which point when joined to O is perpendicular to MN?



(1) A

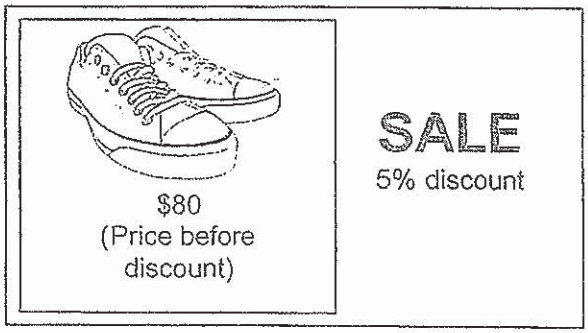
(2) B

(3) C

(4) D

---

9. The price of a pair of shoes is $80 before 5% discount.
What is the price of the pair of shoes after discount?



(1) $75

(2) $76

(3) $84

(4) $85

---

10. Which one of the following fractions is larger than $\frac{1}{4}$?

(1) $\frac{7}{27}$

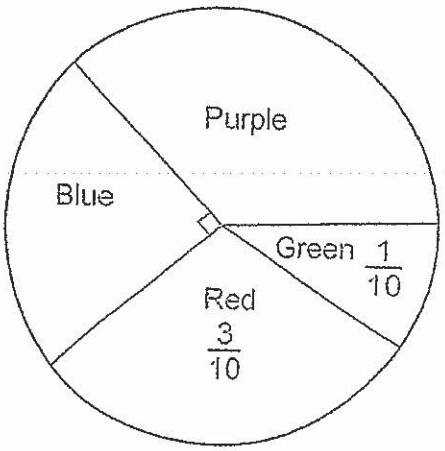
(2) $\frac{6}{24}$

(3) $\frac{4}{17}$

(4) $\frac{3}{13}$

---

11. In a survey, each pupil was asked to name a favourite colour.
The pie chart showed their choices.



15 pupils chose blue as their favourite colour. How many pupils chose purple as their favourite colour?

(1) 12

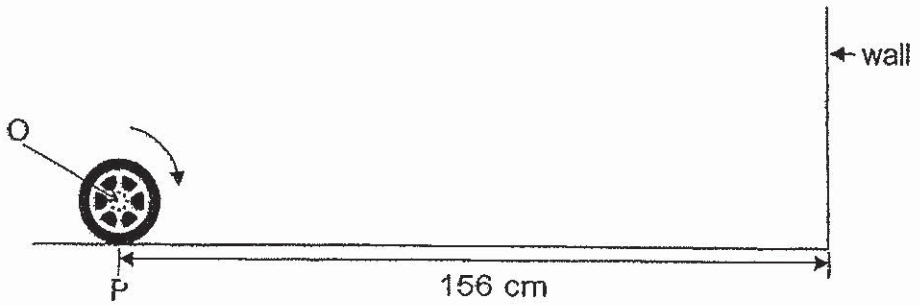
(2) 13

(3) 21

(4) 39

---

12. Davian rolled a toy car wheel from point P on the floor towards a wall on a straight path. The wheel with centre O had a diameter of 6 cm. There was a distance of 156 cm between point P and the wall.



How many revolutions did the toy car wheel make when it touched the wall?

(1) $\frac{153}{6\pi}$

(2) $\frac{153}{9\pi}$

(3) $\frac{156}{6\pi}$

(4) $\frac{156}{9\pi}$

---

13. Hector had a bag of sweets. After giving 35 sweets to his classmates and $\frac{2}{5}$ of the remainder to his neighbours, he was left with $\frac{1}{4}$ of the bag of sweets he had at first. How many sweets did Hector give away?

(1) 15

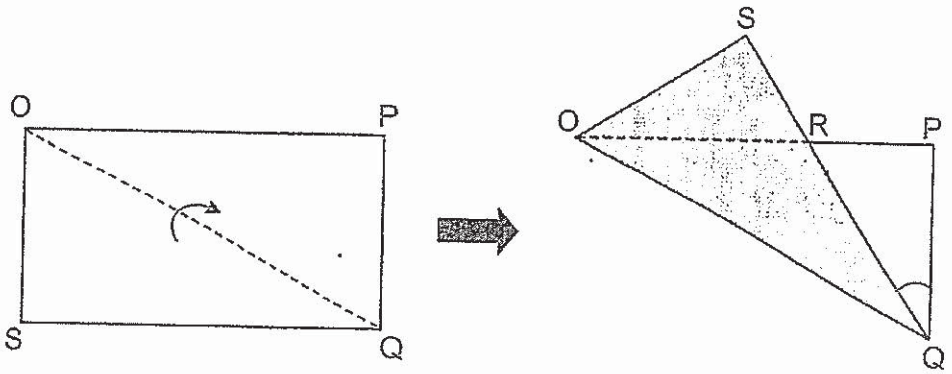
(2) 45

(3) 60

(4) 75

---

14. A rectangular paper OPQS is folded along the dotted line OQ as shown before folding. After folding, ORP is a straight line.



Before folding

After folding

Which of the following statement(s) is/are true?

Statement A : $\angle SRO + \angle PQR = 90°$.

Statement B : ORQ is an isosceles triangle.

Statement C : The area of the rectangular paper OPQS before folding is equal to the area of figure OSRPQ after folding.

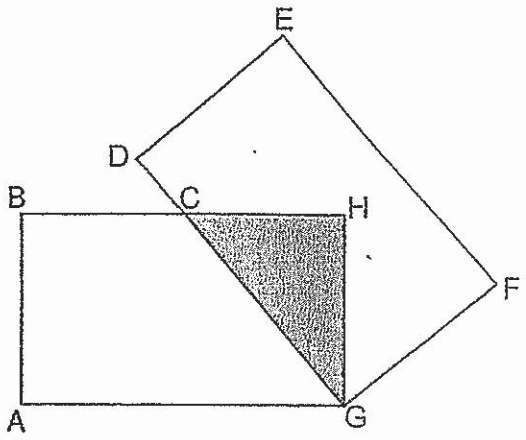
(1) A only

(2) C only

(3) B and C only

(4) A and B only

15. 2 identical rectangles, ABHG and DEFG overlap at CHG to form the figure as shown below. BC = CH. What fraction of the figure is shaded?



(1) $\frac{1}{4}$

(2) $\frac{1}{6}$

(3) $\frac{1}{7}$

(4) $\frac{1}{8}$

END OF BOOKLET A

CATHOLIC HIGH SCHOOL

PRELIMINARY EXAMINATION (2019)

PRIMARY SIX

MATHEMATICS

PAPER 1

(BOOKLET B)

Name : _____ ( )

Class : Primary 6 _____

Date : 27 August 2019

Total Time for Booklets A and B: 1 hour

15 questions

25 marks

Booklet A	
Booklet B	
Total	

INSTRUCTIONS TO CANDIDATES

Do not turn over this page until you are told to do so.

Follow all instructions carefully.

Answer all questions.

Write your answers in this booklet.

The use of calculators is **NOT** allowed.

Questions **16** to **20** carry 1 mark each. Write your answers in the spaces provided. For questions which require units, give your answers in the units stated. All diagrams are not drawn to scale. (5 marks)

Do not write in this space

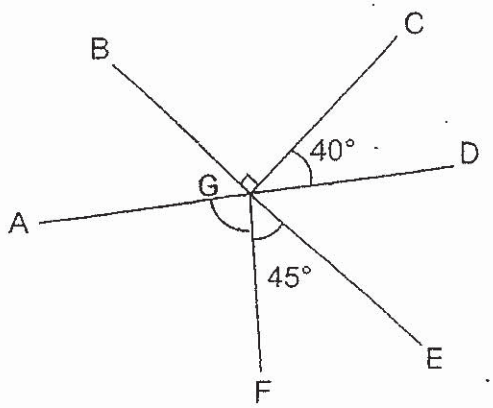
16. Find the value of $\frac{3}{5} \div 9$

Ans: _____

17. Write 0.2% as a fraction in the simplest form.

Ans: _____

18. In the figure, AD and BE are straight lines. Find $\angle AGF$.



Ans: _____ °

19. Use all the digits 7, 2, 1, 8 to form the number closest to 8000.

Do not write in this space

Ans: _____

20. David took 2 hours to drive 160 km from Town A to Town B. Then he drove 110 km for an hour to Town C. What was his average speed for the journey from Town A to Town C?

Ans: _____ km/h

5

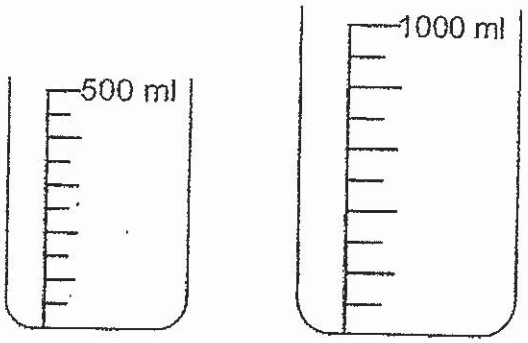
Total marks for questions 16 to 20

Questions **21** to **30** carry 2 marks each. Show your working clearly and write your answers in the spaces provided. For questions which require units, give your answers in the units stated. All diagrams are not drawn to scale.

(20 marks)

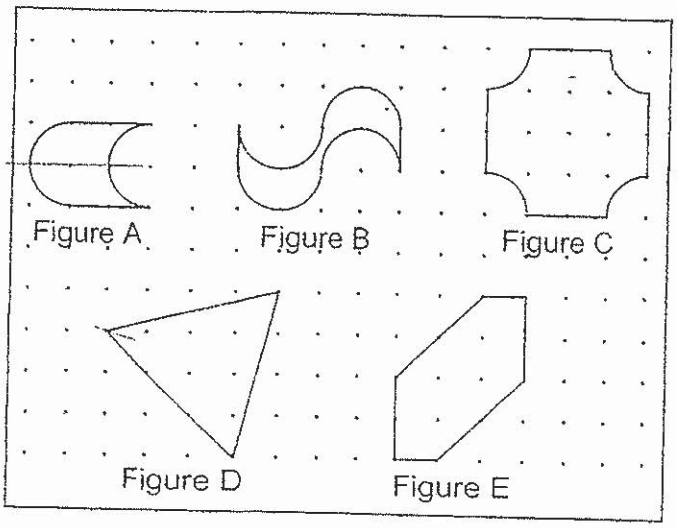
Do not write in this space

21. What is the total amount of water in beaker A and beaker B?



Ans: _____ ml

22. In the dot square grid, figures A and B are drawn using straight lines and semicircles. Figure C is drawn using straight lines and quarter circles while figures D and E are drawn using only straight lines.



Name all the figures above that have at least one line of symmetry.

Ans: _____

23. Mrs Lim wanted to buy 12 oranges but found that she needed another $2. She bought 4 oranges instead and had $5.20 left. What was the cost of 1 orange?

Do not write in this space

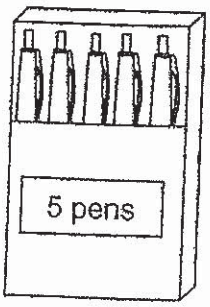
Ans: $_____

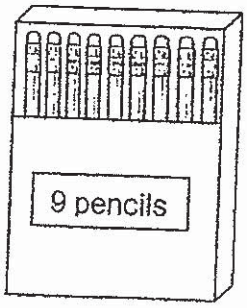
24. The cost of a present was shared among Samuel, Jack and Daphne. The ratio of the amount of money paid by Samuel and Jack was 1 : 3. The ratio of the amount of money paid by Jack and Daphne was 4 : 7. What was the ratio of the least amount of money paid to the most amount of money paid?

Ans: _____

25. Bala bought 15 boxes of pens and pencils. There were 103 pens and pencils altogether. How many boxes of pencils did Bala buy?

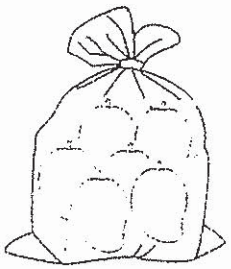
Do not write in this space





Ans: _____

26. A fruit seller packed 1200 mangoes into bags of 6 for sale. The price of each bag was $8.20. How much did the fruit seller collect from the sale?



Ans:$ _____

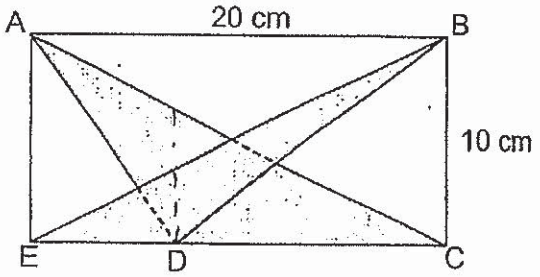
Do not write in this space

27. Eric's average marks for his English, Mathematics and Science tests was 75. His average marks became 60 after the marks for his Chinese test was included. The passing mark for each test was 50.

Each of the statements below is either true, false or not possible to tell from the information given. For each statement, put a tick (✓) to indicate your answer.

	Statement	True	False	Not possible to tell
(a)	Eric scored 75 marks for his Science test.			
(b)	Eric passed his Chinese test since his new average marks of 60 was above the passing mark of 50.			

28. ABCE is a rectangle with a length of 20 cm and a breadth of 10 cm. Triangle EBD which has an area of 40 cm^2, overlaps triangle ACD. What is the area of triangle ACD?



Ans: _____ cm^2

29. Fatihah used black and white beads to form a pattern in the following figures.

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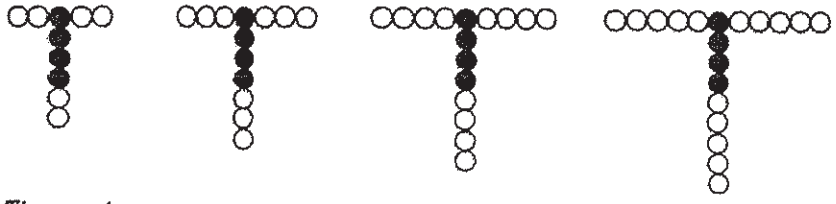


Figure 1 Figure 2 Figure 3 Figure 4

She used 49 black and white beads to make a figure that followed the above pattern. What was this figure number?

Ans: Figure _____

30. At a school event, 57 red balloons and white balloons lined one side of a corridor. There are at least 4 red balloons between 2 white balloons. What is the largest possible number of white balloons along the corridor?

Ans: _____

Total marks for questions 21 to 30

END OF BOOKLET B
END OF PAPER 1

20

CATHOLIC HIGH SCHOOL

PRELIMINARY EXAMINATION (2019)

PRIMARY SIX

MATHEMATICS

PAPER 2

Name : _____ ( )

Class : Primary 6 _____

Date : 27 August 2019

Total Time: 1 h 30 min

17 questions

55 marks

Parent's Signature: _____

Paper 1 Booklet A	20
Paper 1 Booklet B	25
Paper 2	55
Total Marks	100

INSTRUCTIONS TO CANDIDATES

Do not turn over this page until you are told to do so.

Follow all instructions carefully.

Answer all questions.

Write your answers in this booklet.

The use of an approved calculator is expected, where appropriate.

Questions **1** to **5** carry 2 marks each. Show your working clearly in the space below each question and write your answers in the spaces provided. For questions which require units, give your answers in the units stated. All diagrams are not drawn to scale. (10 marks)

Do not write in this space

1. Fazil paid \$9.10 for 3 tarts and 2 cupcakes. The price of a tart was $\frac{1}{5}$ of the price of a cupcake. How much did Fazil pay for a tart?

Ans:\$ _____

2. The table shows the charges for a bicycle rental at a shop.

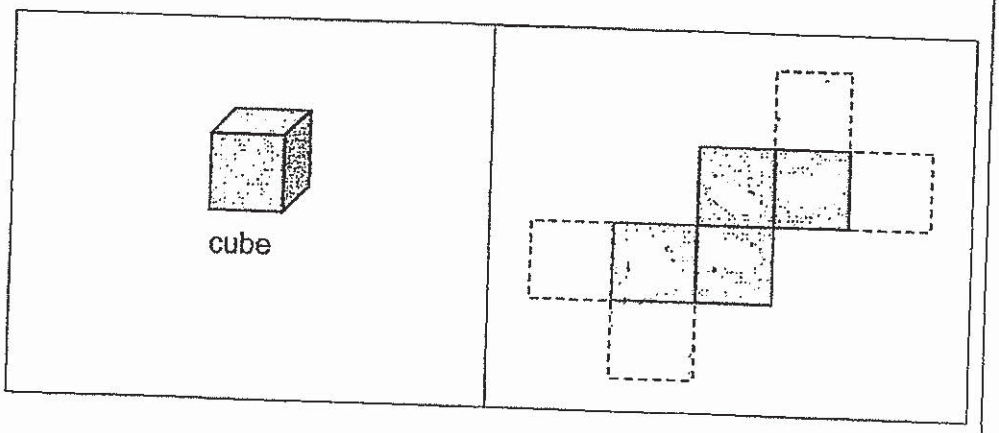
First hour	\$8
Additional half hour or less	\$2.50

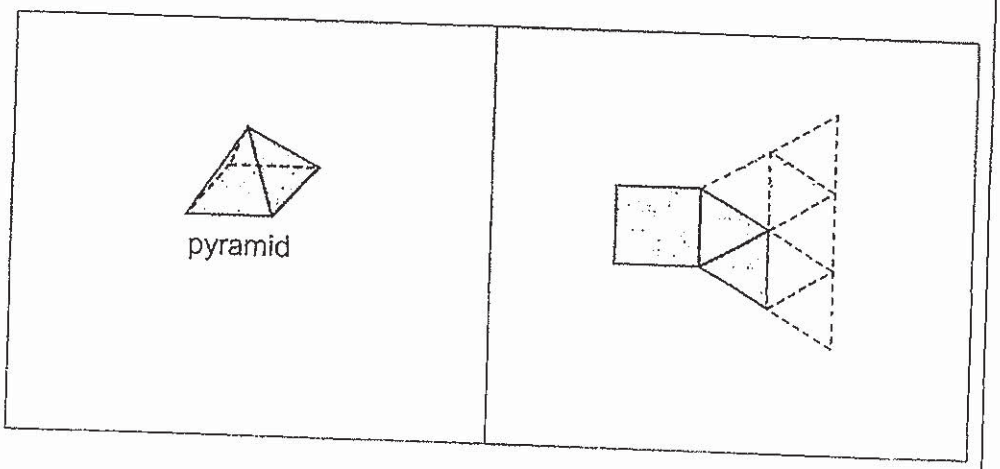
Fred rented a bicycle for 3 h 20 min. How much did he pay for the rental?

Ans:\$ _____

3. The nets drawn for the solids below are missing two faces.
For each net, shade two faces so that the net can be folded to form the respective solids.

Do not write in this space





4. The square grid below shows the plan of a school compound.

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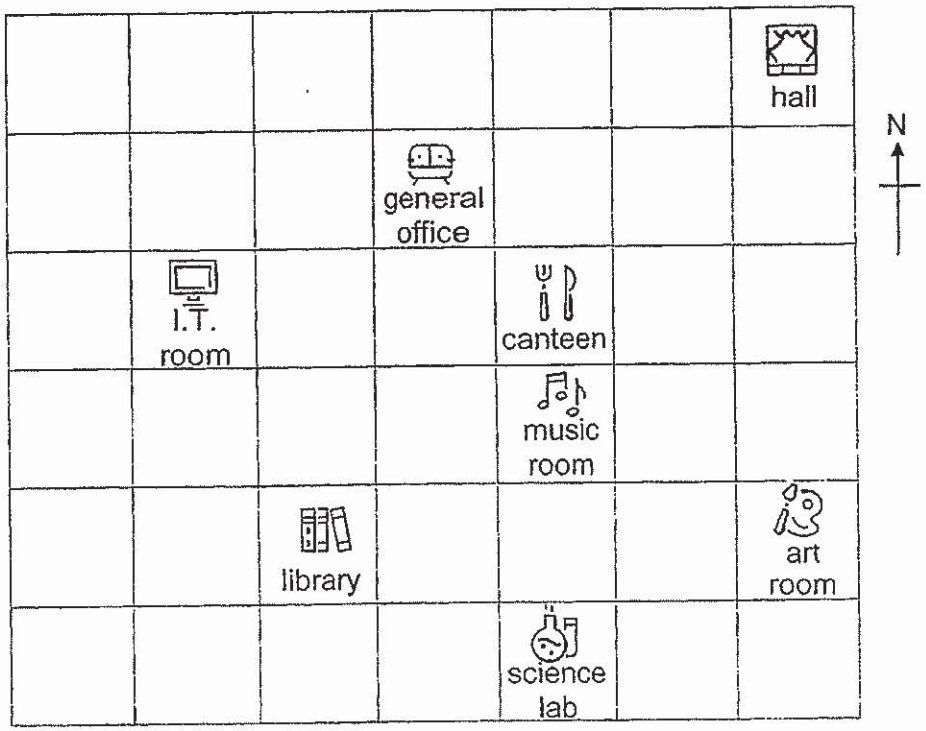


(a) Ned stood at the canteen facing the art room after making a $\frac{1}{4}$ - turn in the anti-clockwise direction. Where was he facing at first?

(b) Ned fixed a location to meet his mother after school. The location of the meeting place was to be north-east of the science lab and east of music room. Put a tick (✓) in the square where the meeting place was.

Ans:(a) _____

5. A stack of 7 identical flower pots were arranged as shown in Figure 1. Figure 2 shows the stack after it had been re-arranged and 4 more identical flower pots were added to it. What is the height of one flower pot?

Do not write in this space

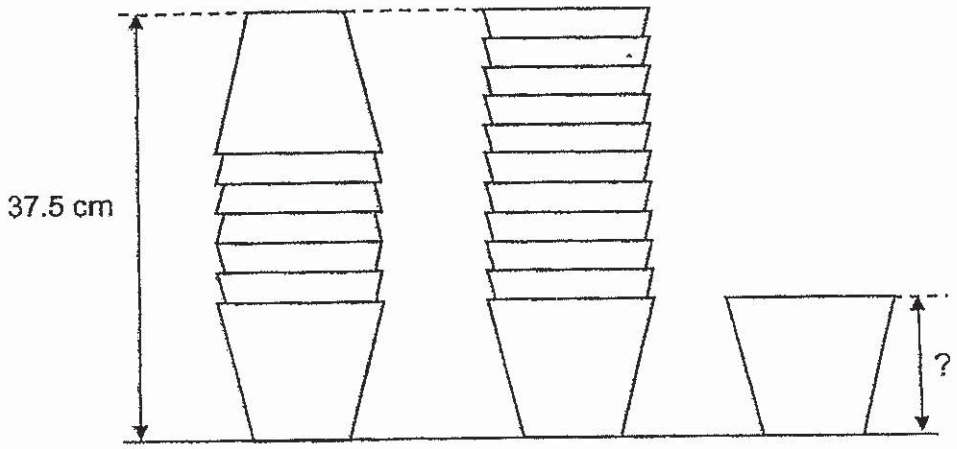


Figure 1 Figure 2 Flower pot

Ans: _____ cm

For questions **6** to **17**, show your working clearly in the space provided for each question and write your answers in the spaces provided. The number of marks available is shown in brackets [ ] at the end of each question or part-question.

(45 marks)

Do not write in this space

6. An exercise book was \$2 less than a file. The total cost of 3 such exercise books was \$$k$.

(a) Express the cost of 6 such exercise books in terms of k in the simplest form.

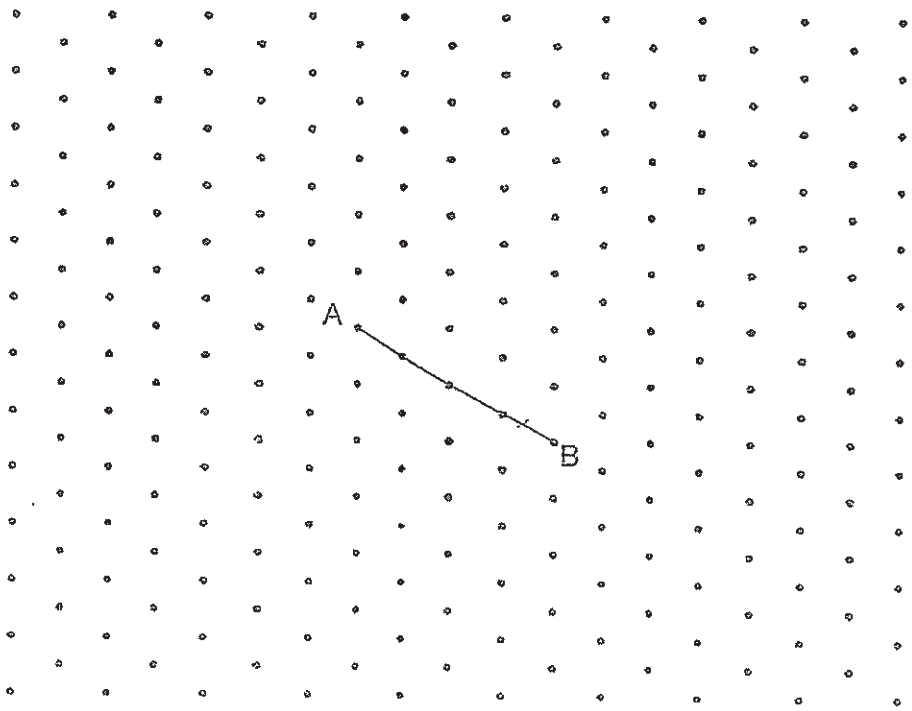
(b) Suresh bought 3 such files and was given a discount of \$1.
How much did he pay for the 3 files?
Express your answer in terms of k in the simplest form.

Ans: (a) _____ [1]

(b) _____ [2]

7. AB is a line drawn on a grid below.

Do not write in this space



[2]

(a) Draw an equilateral triangle ABC on the grid above.

(b) ABDE is a rhombus with $\angle BAE = 120°$. Draw ABDE on the grid above such that it does not overlap equilateral triangle ABC.

(c) What is the ratio of the area of the triangle ABC to the area of the figure EDBC?

Ans: (c) _____ [1]

8. A school conducted dental checks on its Primary 1 pupils from Monday to Thursday. Each pupil had his or her teeth checked on one of the four days. The table below shows the number of pupils who were checked on Monday, Tuesday and Wednesday.

Do not write in this space

Day	Number of pupils
Monday	180
Tuesday	210
Wednesday	120
Thursday	?

(a) The number of pupils checked on Thursday was a 20% decrease from that checked on Wednesday. What was the number of pupils checked on Thursday?

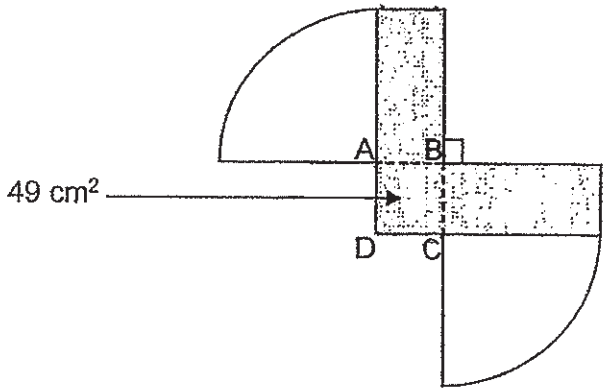
(b) What was the percentage increase in the number of pupils checked on Tuesday compared to Monday?
Give your answer correct to 1 decimal place.

Ans: (a) _____ [1]

(b) _____ [2]

9. The diagram shows 2 identical quarter circles and 2 identical rectangles. The 2 identical rectangles overlap at ABCD to form a square with an area of 49 cm^2. The perimeter of the shaded part is 95.2 cm.

Do not write in this space



(a) Find the radius of each quarter circle.

(b) Find the total area of the quarter circles.
(Take $\pi = \frac{22}{7}$)

Ans: (a) _____ [2]

(b) _____ [2]

10. Jaylen and Ken started jogging from the same place in opposite directions along a straight path. Jaylen's speed was 30 m/min faster than Ken's speed. Both of them did not change their speeds throughout the jog. At the end of the jog, they were 13.6 km apart. Jaylen jogged 2.4 km more than Ken. What was Ken's average speed?

Do not write in this space

Ans: _____ [3]

11. A rectangular tank contained some water at first. A tap was then turned on to fill the tank completely with water. It was turned off at the end of 90 minutes. The graph below shows the amount of water in the tank at the end of 90 minutes.

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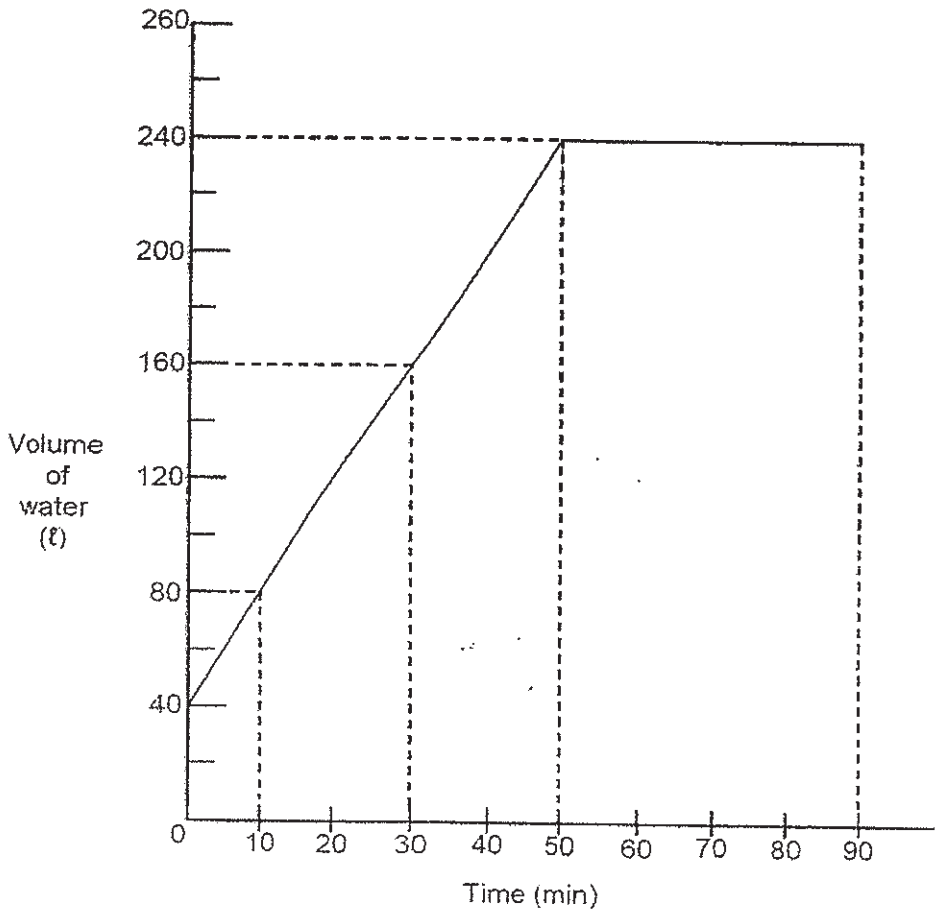


(a) In one minute, how many litres of water flowed from the tap?

(b) How many litres of water overflowed from the tank at the end of 90 minutes?

Ans: (a) _____ [2]

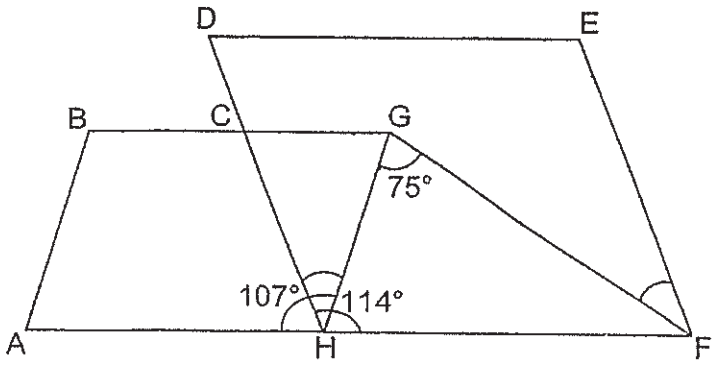
(b) _____ [2]

12. In the figure, ABGH and DEFH are parallelograms. AHF is a straight line. $\angle GHA = 107°$, $\angle FHC = 114°$ and $\angle HGF = 75°$.

Do not write in this space

(a) Find $\angle GHC$.

(b) Find $\angle EFG$.

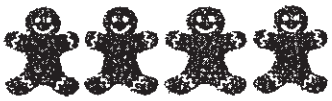


Ans: (a) _____ [2]

(b) _____ [2]

13. Mrs Lee baked 16 gingerbread men and 18 gingerbread trees using 552 g of flour. The amount of flour she used for 4 gingerbread men was the same as that for 7 gingerbread trees.

Do not write in this space



(a) How many gingerbread trees could she bake with the same amount of flour used for 16 gingerbread men?

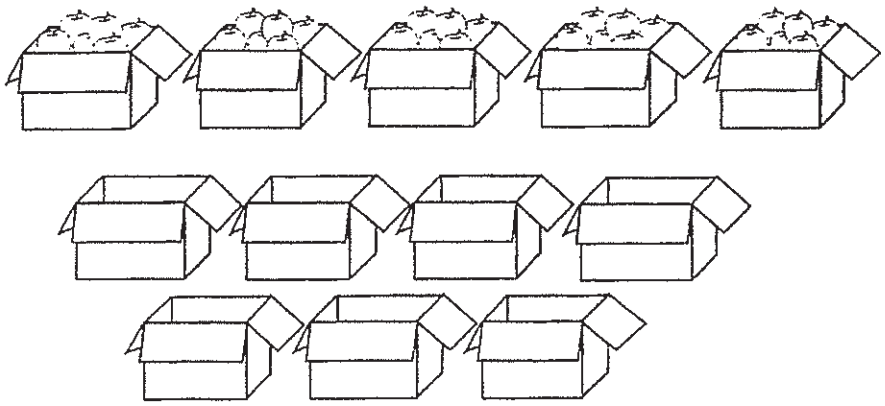
(b) What was the total mass of flour used for a gingerbread man and a gingerbread tree?

Ans: (a) _____ [1]

(b) _____ [3]

14. Jun Yang had 5 boxes each containing an equal number of apples and 7 empty boxes as shown below. He removed 21 apples from each of the 5 boxes and packed them into the 7 empty boxes. After that, each of the 11 boxes had the same number of apples except for the 12th box which had only 3 apples. How many apples were there in all the 12 boxes altogether?

Do not write in this space



Ans: _____ [3]

15. In a shop, bread and cheese were sold only in packets as shown below. A packet of 8 slices of bread cost $1.70 and a packet of 5 slices of cheese cost $2.25.

Do not write in this space

Packet of bread

Packet of cheese

(a) Evan wanted 27 slices of bread and 18 slices of cheese to make some sandwiches. What was the least amount of money that Evan spent on the bread and cheese at the shop?

Ans: (a) _____ [2]

Continue from Question 15

Do not write in this space

(b) Ron wanted to make at least 50 sandwiches for a party, each using only 2 slices of bread and a slice of cheese.

He bought some packets of bread and cheese and did not have any remaining slices of bread and cheese after he finished making the sandwiches. What was the least amount of money that Ron spent on the bread and cheese at the shop?

Ans: (b) _____ [3]

Go on to the next page

16. Stickers were sold only in big sheets of 60 stickers each and small sheets of 25 stickers each.

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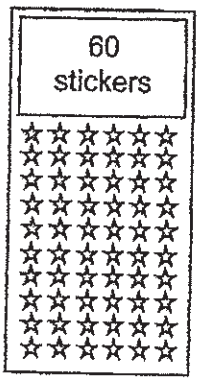
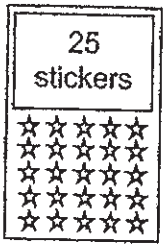


Big sheet



Small sheet

Andy and Ben bought the same number of sheets of stickers. Andy and Ben each bought some big sheets of stickers. Andy bought 8 small sheets of stickers while Ben bought 17 small sheets of stickers.

(a) What was the difference in the total number of stickers between Andy and Ben?

(b) Ben gave away all the big sheets of stickers that he had bought. As a result, he had 735 fewer stickers than Andy. How many sheets of stickers did each boy buy?

Ans: (a) _____ [2]

(b) _____ [2]

17. Stan glued a large cube A, a smaller cube B and 3 1-cm cubes together to form a solid as shown in Figure 1. He painted the solid including its base.
He then glued a rectangular block C to the solid in Figure 1 to form another solid as shown in Figure 2. Cube A and block C have the same base area.

Do not write in this space

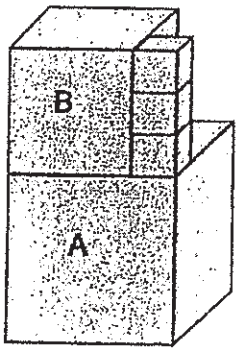


Figure 1

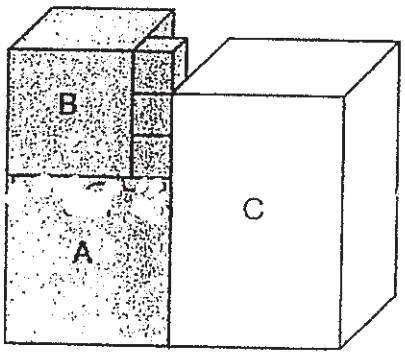


Figure 2

(a) What fraction of the length of an edge of cube A was the length of an edge of cube B?

(b) Find the painted area of the solid in Figure 1.

(c) Stan glued some more 1-cm cubes to the solid in Figure 2 to form a larger rectangular solid. What was the least number of 1-cm cubes used?

Ans: (a) _____ [1]

(b) _____ [2]

(c) _____ [2]

END OF PAPER 2

YEAR	:	**2019**
LEVEL	:	**PRIMARY 6**
SCHOOL	:	**CATHOLIC HIGH SCHOOL**
SUBJECT	:	**MATHEMATICS PAPER 1**
TREM	:	**PRELIMINARY EXAMINATION**

BOOKLET A
PAPER 1

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
4	3	1	2	2	4	3	2	2	1
Q11	Q12	Q13	Q14	Q15					
3	1	2	4	3					

BOOKLET B
PAPER 1

Q16. $\frac{3}{5} \div 9 = \frac{3}{5} \times \frac{1}{9}$

$= \frac{1}{15}$

Ans : $\frac{1}{15}$

Q17. $0.2\% \div 100 = 0.002$

$= \frac{2}{1000}$

$= \frac{1}{500}$

Ans : $\frac{1}{500}$

Q18. Angle DGE $= 180^0 - 90^0 - 40^0$

$= 50^0$

Angle AGF $= 360^0 - 50^0 - 50^0 - 45^0 - 40^0 - 90^0$

$= 85^0$

Ans : 85^0

Q19.

Ans : 8127

Q20.

Total Time = 2h + 1h = 3h
Total Distance = 160km + 110km
= 270km
Average speed = 270km ÷ 3h
= 90km/h

Ans : 90km/h

Q21.

Ans : 650ml

Q22.

Ans : (A, C and D)

Q23.

12u – 4u = 8u
8u = 2 + 5.20 = 7.20
1u = 7.20 ÷ 8 = 0.90

Ans : $0.90

Q24.

Ans : 4 : 21

Q25. Assume all were pens
Total = 5 x 15 = 75
Extra = 103 – 75 = 28
Diff = 9 – 5 = 4
Opp. = 28 ÷ 4 = 7

Ans : 7

Q26. No. of Bags = 1200 ÷ 6
= 200

200 x 8.20 = 8.20 x 2 x 100
= 16.40 x 100
= 1640

Ans: $1640

Q27. (a) Not possible to tell
(b) False

28.

20 x 10	= 200
40 x 2	= 80
200 – 80	= 120
120 ÷ 2	= 60

Ans : 60cm^2

Q29. 49 – 4 = 45
45 ÷ 3 = 15
15 – 1 = 14

Ans : 14

Q30.

57 – 1 =	56
4 + 1 =	5
56 ÷ 5 =	11 R 1
11 + 1 =	12

Ans : 12

PAPER 2

Q1.

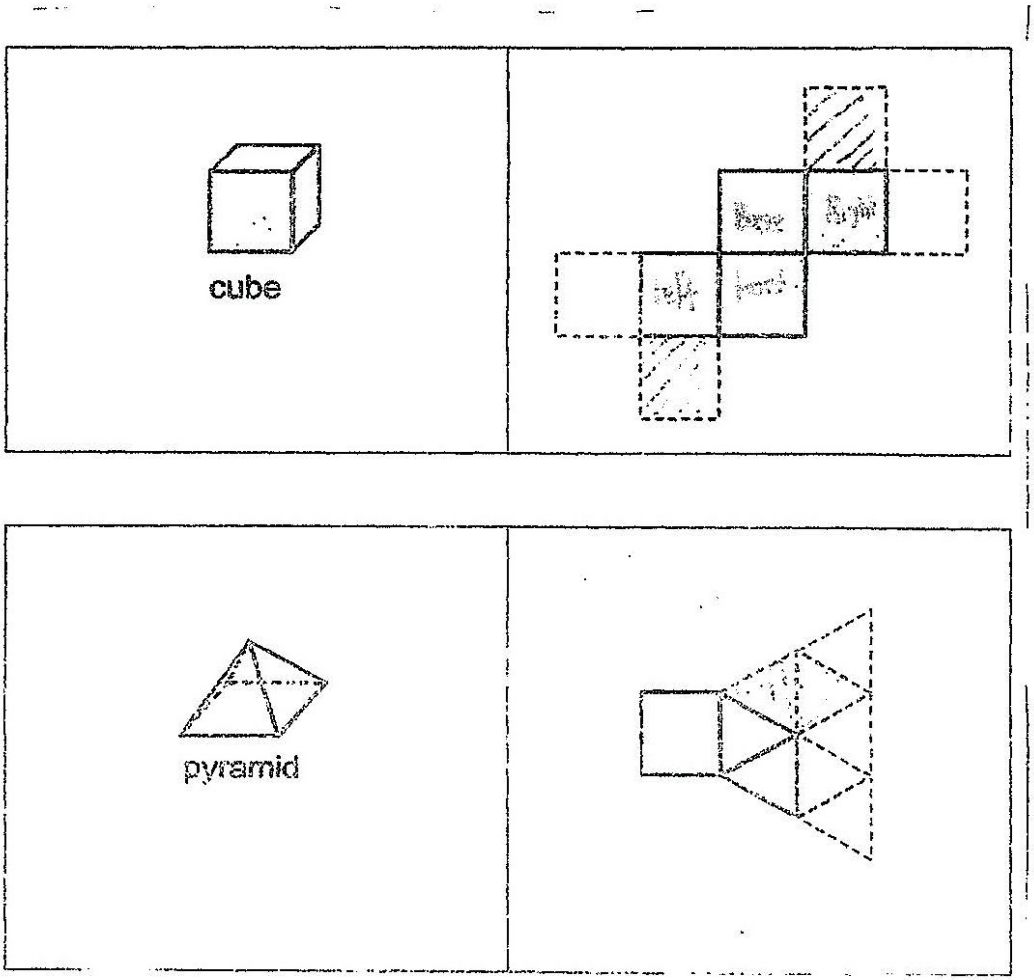
1 tart	**=**	**1u**	
1c	**=**	**5u**	
3 tarts		**=**	**3u**
2c	**=**	**10u**	
9.10 ÷ 13	**=**	**0.70**	

Ans : $0.70

Q2. **8 + 2.5 + 2.5 + 2.5 + 2.5 + 2.5 = 20.5**

Ans : $20.50

Q3.



Q4.

Ans : (a) library

(b) The square above the art room

Q5. $2B + 5S = 37.5$

$1B + 10S = 37.5$

$1B + 10s = 2B + 5S$

$10S - 5S = 2B - 1B$

$5S = 1B$

$3B = 37.5$

$1B = 37.5 \div 3$

$= 12.5$

Ans : 12.5cm

Q6. (a) $3E = k$

$6E = 2k$

(b) $k \div 3$ = cost of 1E

$\frac{k}{3} + 2$ = cost of 1F

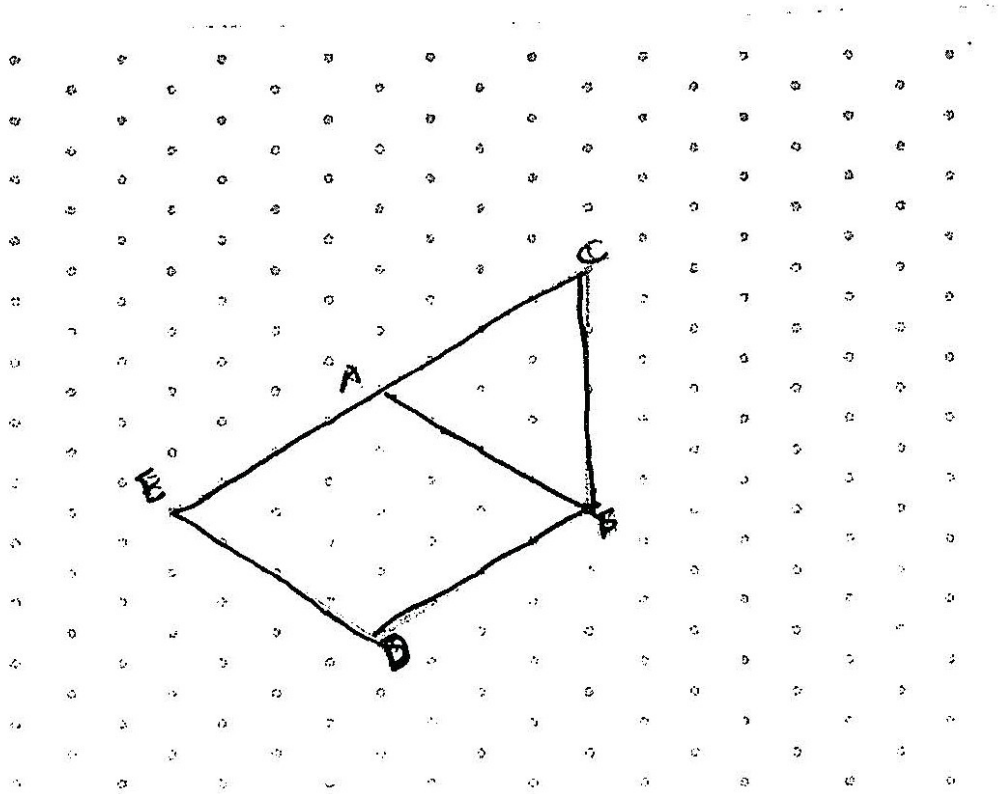
$\frac{k}{3} + 2 + \frac{k}{3} + 2 + \frac{k}{3} + 2 = (k + 6)$

$k + 6 - 1 = (k + 5)$

Ans : (a) \$ (2k)

(b) \$ (k + 5)

Q7.



[2]

(c) T : Total
16 : 48
1 : 3

Ans : (c) 1 : 3

Q8. (a) 100% w = 120
1%w = 120 ÷ 100
= 1.2
100% - 20% = 80%
80%w = 1.2 x 80
= 96

(b) 210 – 180 = 30
$\frac{30}{180}$ x 100% ≈ 16.7%

Ans : (a) 96
(b) 16.7%

Q9. (a) $\sqrt{49} = 7$

$95.2 - 7 - 7 - 7 - 7 = 67.2$

$67.2 \div 4 = 16.8$

(b) Area 2 $\triangle$ $= \frac{1}{2} \times \frac{22}{7} \times 16.8 \times 16.8 = 443.52$

Ans : (a) 16.8 cm

(b) $443.52 cm^2$

Q10. $13.6 - 2.4 = 11.2$

$11.2 \div 2 = 5.6$

$5.6 + 2.4 = 8$

In 1 min, J 30m faster than K

In 80 min, J 2400m faster than K

$8 \div 1\frac{1}{3} = 6$

$0.03 \times 60 = 1.8$

$6 - 1.8 = 4.2$

Ans : 4.2km/h

Q11. (a) 10min $\rightarrow$ $80 - 40 = 40l$

1min $\rightarrow$ $40 \div 10 = 4I$

(b) 40 min $\rightarrow$ $4 \times 40 = 160I$

Ans : (a) $4I$

(b) $160I$

Q12. (a) $\triangle EDH = 180^0 - 114^0 = 66^0$

$\triangle BAH = 180^0 - 107^0 = 73^0$

$\triangle GHF = 180^0 - 107^0 = 73^0$

$\triangle GHC = 114^0 - 73^0 = 41^0$

(b) $\triangle GFH = 180^0 - 75^0 - 73^0 = 32^0$

$\triangle EFG = 66^0 - 32^0 = 34^0$

Ans : (a) 41^0

(b) 34^0

Q13. (a) $4M = 7T$

$16M \div 4M = 4$

$4 \times 7T = 28$

(b) $28 + 18 = 46$

$46u = 552$

$1u = 552 \div 46 = 12$ (1 tree)

$7u = 12 \times 7 = 84$

$4G = 84$

$1G = 84 \div 4 = 21$

$21 + 12 = 33$

Ans : (a) 28

(b) 33g

Q14. $21 \times 5 = 105$

$105 - 3 = 102$

$102 \div 6 = 17$

$17 \times (5 + 6) = 187$

$187 + 3 = 190$

Ans : 190

Q15. (a) **Bread**

$27 \div 8 = 3R3$

$3 + 1 = 4$

$4 \times 1.7 = 6.8$

Cheese

$18 \div 5 = 3R3$

$3 + 1 = 4$

$4 \times 2.25 = 9$

$9 + 6.8 = 15.8$

(b) 50 sandwiches

Bread	Cheese
$2 \times 50 = 100$	$50 \times 1 = 50$
$100 \div 8 = 12R4$	$50 \div 5 = 10$
$12 + 1 = 13$	$10 + 1 = 11$ (packets)
$13 \times 8 = 104$	$11 \times 5 = 55$ (amt. of sandwiches can make)
$104 \div 2 = 52$	$11 + 1 = 12$ (packets)

(amt. of sandwiches can make)

$13 + 1 = 14$

$14 \times 8 = 112$

$112 \div 2 = 56$ (amt. of sandwiches can make)

$14 + 1 = 15$	$12 \times 5 = 60$ (amt. of sandwiches can make)
$15 \times 8 = 120$	
$120 \div 2 = 60$	

(amt. of sandwiches can make)

To make 60 sandwiches Ron need 12 packets of cheese and 15 packets of bread.

Bread

$15 \times 1.7 = 25.5$

Cheese

$12 \times 2.25 = 27$

Total

$27 + 25.5 = 52.5$

Ans : (a) \$15.80

(b) \$52.50