ROSYTH SCHOOL
2018 PRELIMINARY EXAMINATION
MATHEMATICS
PAPER 1
PRIMARY 6

Name: _____   Register No. _____

Class: Pr 6 -_____

Date: 20 August 2018   Parent's Signature: _____

Total Time for Booklets A and B : 1 hour

Booklet A

<u>Instructions to Pupils:</u>

1. Do not open this booklet until you are told to do so.
2. Follow all instructions carefully.
3. Shade your answers in the Optical Answer Sheet (OAS) provided.
4. You are <u>not</u> allowed to use a calculator.
5. Answer all questions.

Section	Maximum Mark	Marks Obtained
Paper 1 (Booklet A)	20	

* This booklet consists of <u>8</u> pages (including this cover page).

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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 in this paper are not drawn to scale unless stated otherwise.

(20 marks)

1.   Round off 41 856 to the nearest thousands.

   (1)   41 000
   (2)   41 860
   (3)   41 900
   (4)   42 000

2.   Arrange these distances from the longest to the shortest:
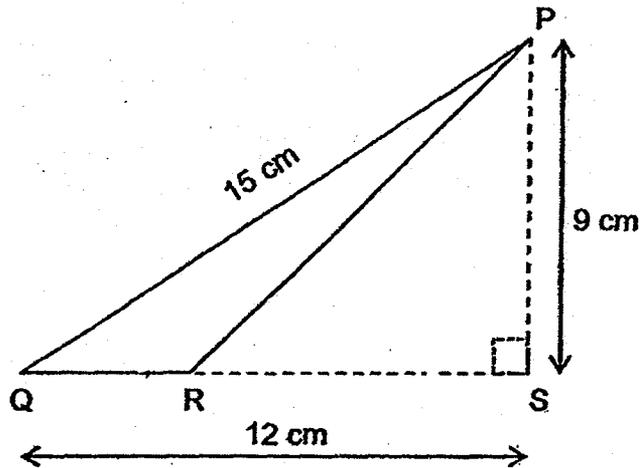
5.01 m,	0.55 km,	505 cm

	Longest		Shortest
(1)	0.55 km	, 505 cm	, 5.01 m
(2)	0.55 km	, 5.01 m	, 505 cm
(3)	505 cm	, 5.01 m	, 0.55 km
(4)	5.01 m	, 505 cm	, 0.55 km

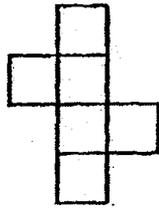3.   Express $14m - 12 - 6m + 7m$ in its simplest form.

   (1) $3m$
   (2) $m + 2$
   (3) $m - 12$
   (4) $15m - 12$

2

4. In the figure below, PS = RS. Find the area of triangle PQR.
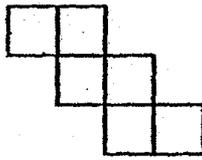

(1) 13.5 cm²

(2) 22.5 cm²

(3) 54 cm²

(4) 67.5 cm²

5. Ali travelled at an average speed of 60 km/h from home to his work place. He took 20 min for the journey. What was the distance travelled?

(1) 12 km
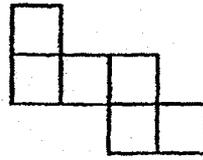
(2) 20 km

(3) 3 km

(4) 1200 km

3

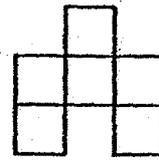6. Which of the following nets can be folded to form a cube?


(A)   (B)   (C)   (D)

(1) A and B only

(2) A, B and C only

(3) A, C and D only

(4) All of the above

7. The opening hours of Chan's Clinic are shown below.
   How long is the clinic open each day?

(1) 6 h 15 min

(2) 6 h 45 min

(3) 7 h 15 min

(4) 7 h 45 min

Chan's Clinic
Opening Hours
9 a.m. to 1 p.m.
6.45 p.m. to 10 p.m.

4

8. The table shows the number of students who travels to school using different modes of transport during school days. Which pie chart represents the data correctly?

Students who travel to school
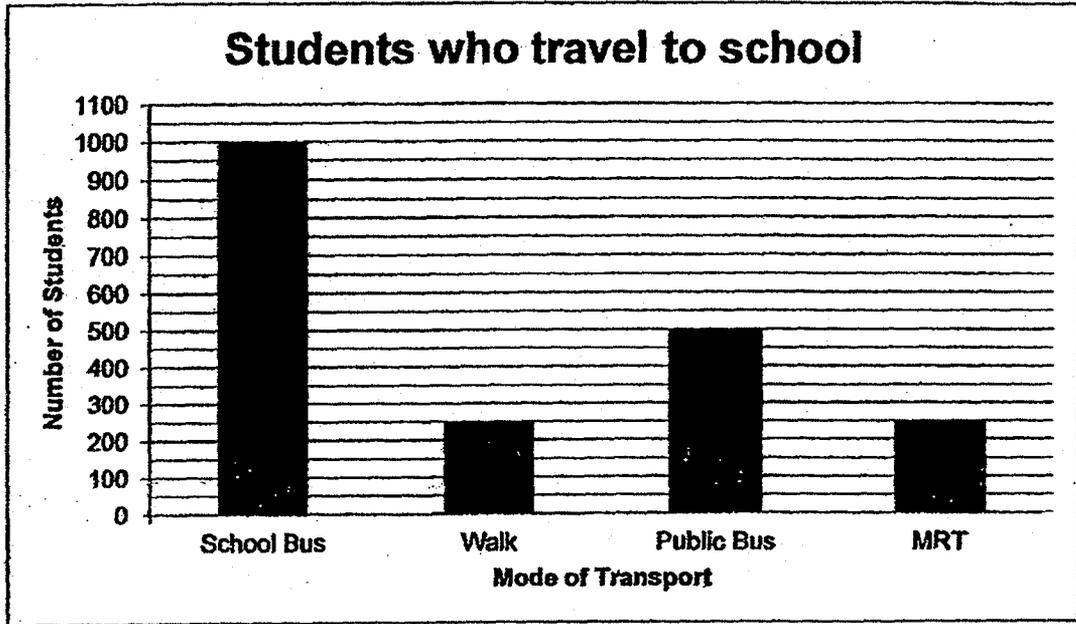
(1)

(2)

(3)

(4)

9. Read the following statements and decide whether the statement(s) is/are
    Not always True, True or False.

    A. All four-sided shapes can always be divided into 2 triangles.

    B. There are no parallel lines in a trapezium.

    C. Every square is a parallelogram.

	A	B	C
(1)	Not always true	True	False
(2)	True	False	Not always true
(3)	True	False	True
(4)	Not always true	False	Not always true

10. The graph below shows the number of members in a fitness club over a period of
    time.

Number of Members in a Fitness Club
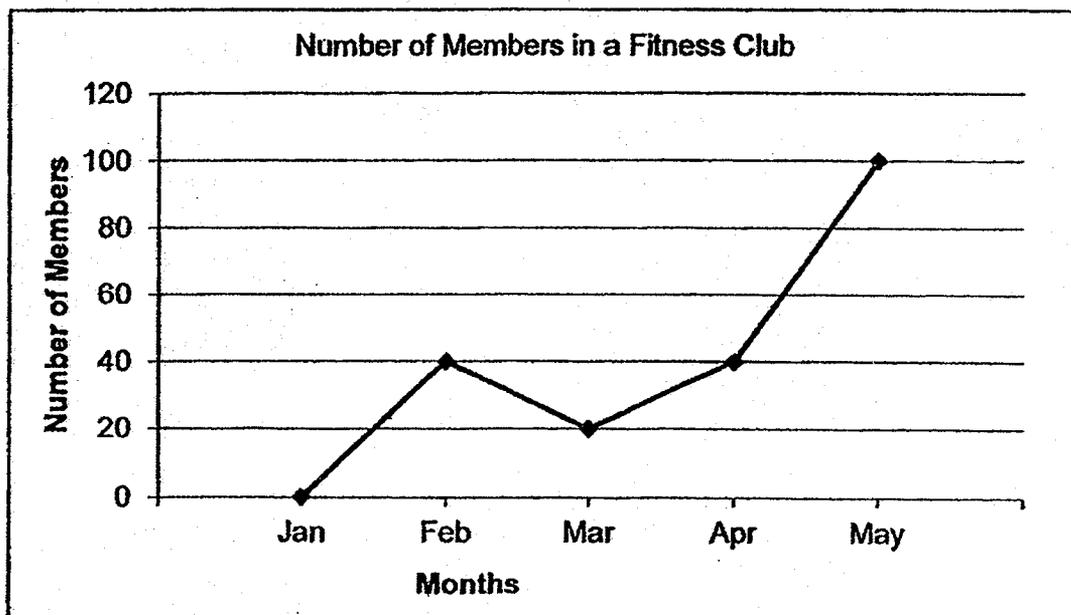
    Which month did the fitness club have the greatest increase in the number of
    members?

    (1) Jan to Feb

    (2) Feb to Mar

    (3) Mar to Apr

    (4) Apr to May

6

11. Mrs Tan had 15 kg of flour. She packed the flour equally into bags, each weighing $\frac{4}{5}$ kg. How much flour was left unpacked?

    (1) $\frac{1}{5}$ kg

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

    (3) $\frac{3}{5}$ kg

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

12. Thomas had a total of 600 red, blue and black pens. $\frac{2}{5}$ of the pens were red. $\frac{1}{5}$ of the remaining pens were blue. How many black pens were there?

    (1)   72

    (2)   192

    (3)   240

    (4)   288

13. In the equation below, find the number in the box.
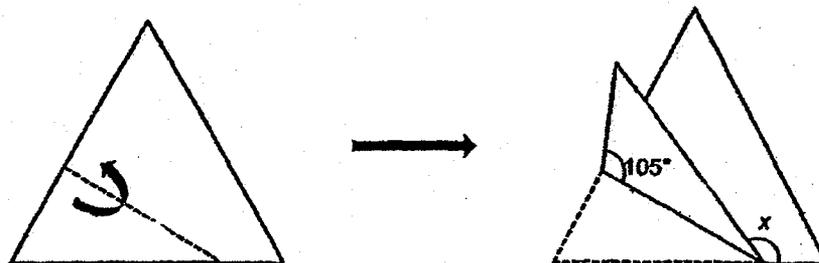
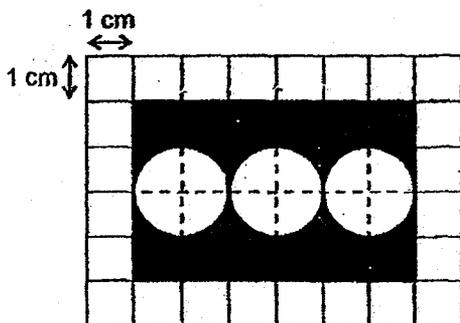$$0.5 \times 240 = \boxed{?} \times 1200$$

    (1)   0.01

    (2)   0.1

    (3)   2.5

    (4)   5

7

14. A piece of paper in the shape of an equilateral triangle is folded along the dotted line as shown below. Find ∠x.

(1) 15°

(2) 30°

(3) 105°

(4) 150°

15. The figure below is made up of a rectangle and 3 identical circles. Find the area of the shaded part. Leave your answer in terms of π.

(1) (24 – 3π) cm²

(2) (24 – π) cm²

(3) (6 – 3π) cm²

(4) (6 – π) cm²

8

ROSYTH SCHOOL
2018 PRELIMINARY EXAMINATION
MATHEMATICS
PAPER 1
PRIMARY 6

Name: _____   Register No. _____

Class: Pr 6 - _____   Group: _____

Date: 20 August 2018   Parent's Signature: _____

Total Time for Booklets A and B : 1 hour

Booklet B

Instructions to Pupils:

1. Do not open this booklet until you are told to do so.
2. Follow all instructions carefully.
3. You are **not** allowed to use a calculator.
4. Write your answers in the booklet.
5. Answer all questions.

Section	Maximum Mark	Marks Obtained
Paper 1 (Booklet B)	25	

* This booklet consists of **10** pages (including this cover page).

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.
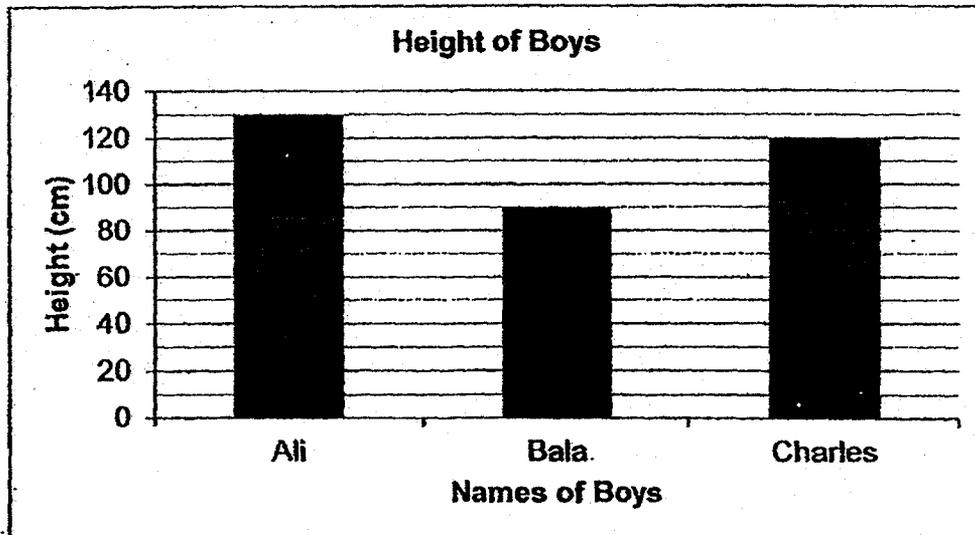
All diagrams in this paper are not drawn to scale unless stated otherwise.

(5 marks)

16.   Find the sum of 3 tens, 33 hundredths and 300 thousandths.

Answer : _____

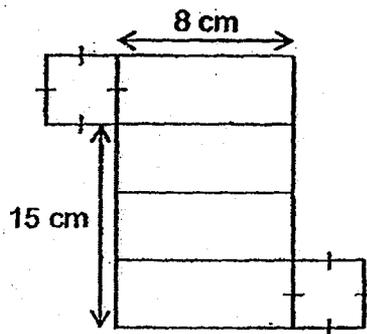17.   The graph below shows the height of 3 boys Ali, Bala and Charles. Find the total height of Ali and Charles.

Height of Boys

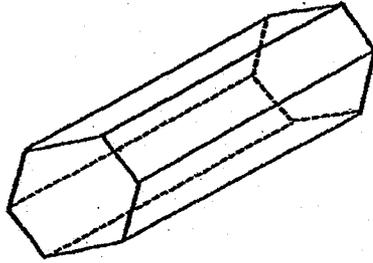Answer : _____ cm

(Go on to the next page)

18. Find 0.5% of 500.

Answer : _____

19. The net shown below can be folded to form a cuboid.
What is the volume of the cuboid?

Answer : _____ cm³

20. How many faces does the following solid have?

Answer : _____

4

Questions **21** to **30** carry 2 marks each. Show your workings clearly in the space provided for each question and write your answers in the spaces provided. For questions which require units, give your answers in the units stated.

All diagrams in this paper are not drawn to scale unless stated otherwise.

(20 marks)

21. Find the value of $(87 - 23) \times 2 \div 4 - (36 - 24)$.

Answer : _____

22. The table below shows the parking charges of a carpark.

| First hour	$1.20
Every additional 10 minutes or part thereof	$0.80

How much does it cost to park from 3 p.m. to 5.06 p.m.?

Answer : _____

5

23. In a class, every group of 4 boys was given 6 stickers and every group of 3 girls was given 8 stickers. The class teacher gave the stickers to an equal number of boys and girls. What was the minimum number of stickers needed?

Answer : _____

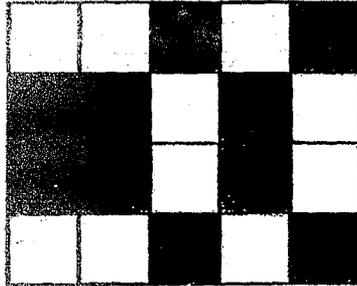24. A packet of sausages is shown below. Mrs Lee bought 1kg 400g of sausages. How many sausages did she buy?

7 identical
sausages
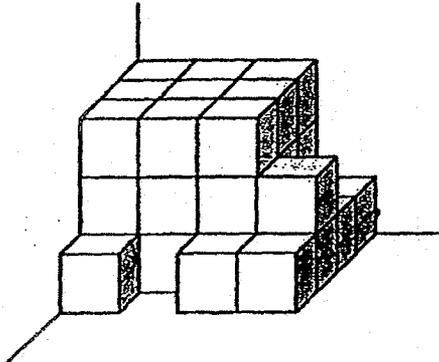280g

Answer : _____

6
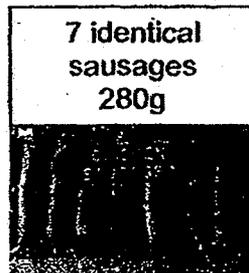
25. The figure below is made up of squares.
Shade two more squares so that the figure has a line of symmetry.

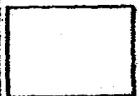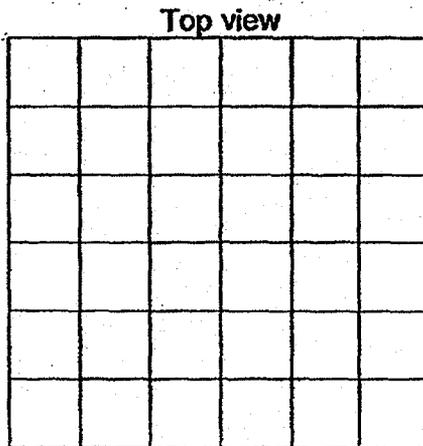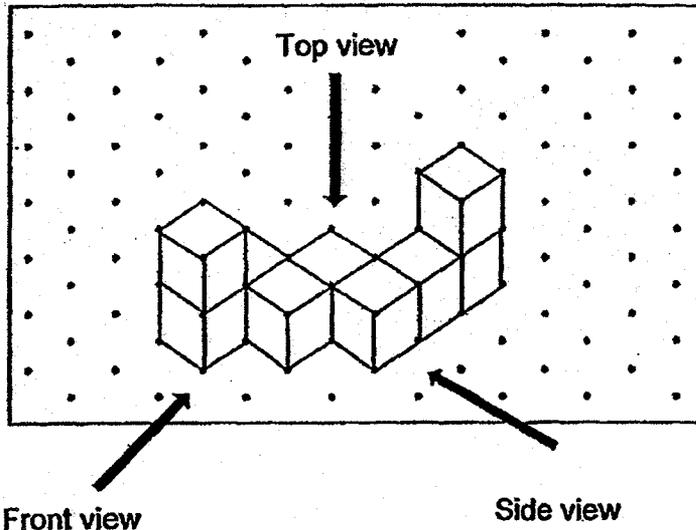26. The figure below shows 1-cm unit cubes stacked against a corner. What is
the least number of unit cubes that must be removed to form a cube?

Answer : _____

7

27. Draw the top view of the solid in the grid below.

Top view

Front view

Side view

Top view

28. The total cost of 3 apples and 2 pears is $(5y + 3). The cost of 2 apples is $2 more than the cost of 2 pears. What is the total cost of an apple and a pear? Express the answer in terms of y.

Answer : $ _____

29. Figure A is made up of 8 identical squares. There are 3 squares removed from Figure A to form Figure B. The perimeter of Figure B is 120 cm. What is the perimeter of Figure A?
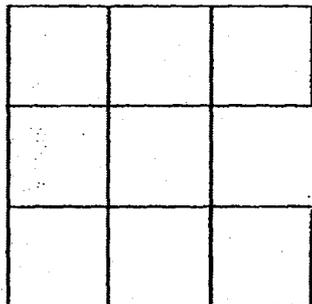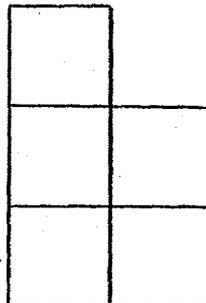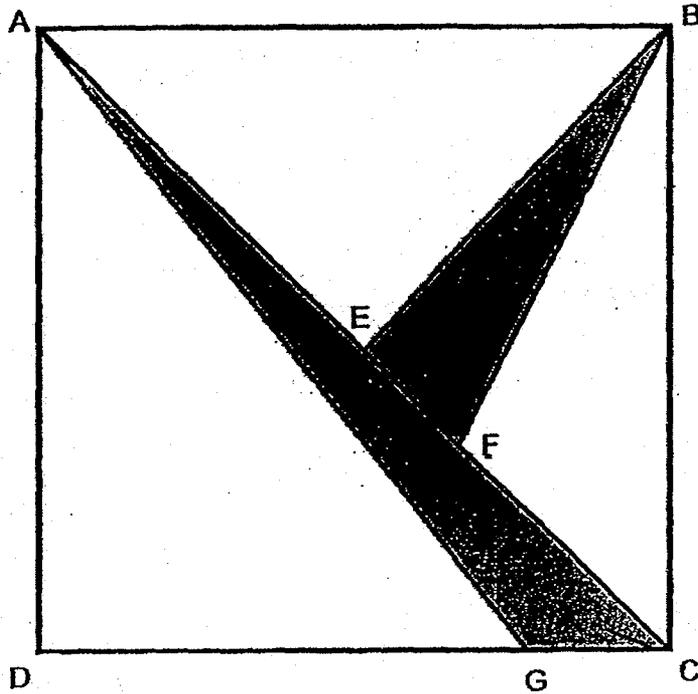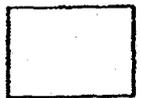
Figure A   Figure B

Answer : _____ cm

30. The square ABCD was cut into 5 parts. Given that the ratio of BE : EC is 1 : 1, the ratio of EF : FC is 1 : 2 and the ratio of DG : GC is 3 : 1. What fraction of the square is shaded?

Answer : _____

ROSYTH SCHOOL
2018 PRELIMINARY EXAMINATION
MATHEMATICS
PAPER 2
PRIMARY 6

Name: _____   Register No. _____

Class: Pr 6 - _____

Date: 20 August 2018   Parent's Signature: _____

Time: 1 h 30 min

<u>Instructions to Pupils:</u>

1. Do not open this booklet until you are told to do so.

2. Follow all instructions carefully.

3. **Show your workings clearly** as marks are awarded for correct working.

4. Write your answers in this booklet.

5. You are allowed to use a calculator.

6. Answer all questions.

Questions	Maximum Mark	Marks Obtained
Q 1 to 5	10	
Q 6 to 17	45	

Section	Maximum Mark	Marks Obtained
Paper 1	45	
Paper 2	55	
Total	100	

* This booklet consists of 16 pages (including this cover page).
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Questions **1** to **5** carry 2 marks each. Show your working clearly in the space provided for each question and write your answers in the spaces provided. For questions which require units, give your answers in the units stated.

(10 marks)

All diagrams in this paper are not drawn to scale unless stated otherwise.

1. Tricia had 70 chocolates. She gave 3w chocolates to her brother. Then she gave the rest equally to her 5 cousins. How many chocolates did each cousin receive? Leave your answer in terms of *w*.

Answer : _____

2. Mrs Pradeep bought some flour. She used $2\frac{1}{5}$ kg of the flour and gave $\frac{3}{7}$ of the remaining flour to her sister. In the end, she was left with $1\frac{3}{5}$ kg of the flour. How much flour did she buy at first?

Answer : _____ kg

3. Ariel was at a fun-fair. The table below shows the number of points which can be exchanged for tickets. Ariel wanted to win a soft-toy which required 80 tickets. How many points must Ariel get in order to exchange for her soft-toy?

Points	Tickets
885	300

Answer : _____

4. Miss Lee gave away an almond on Day 1. She increased the number of almonds given away every day by 100%. Find the ratio of the number of almonds given on Day 7 to the number of almonds given on Day 3. Give your answer in the simplest form.

Answer : _____

3

5. The average of the odd numbers below is 7. What odd number must be added so that the average of all the numbers becomes 10?

$$1 , 3 , 5 , 7 , 9 , 11 , 13$$

Answer : _____

4

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. For questions which require units, give your answers in the units stated.
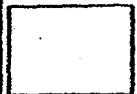
(45 marks)

All diagrams in this paper are not drawn to scale unless stated otherwise.

Do not write in this space

6.   A crate was filled with an equal number of apples and oranges. The apples were sold for $315 and the oranges were sold for $225. Each apple cost $0.20 more than each orange. How many oranges were sold?

Answer : _____ [3]

5

7. The ratio of the number of Dawn's stickers to the number of Evelyn's stickers was 1 : 4. After Dawn and Evelyn gave away $\frac{1}{3}$ and $\frac{3}{4}$ of their stickers respectively, they were left with 90 stickers altogether. How many stickers did they have at first?
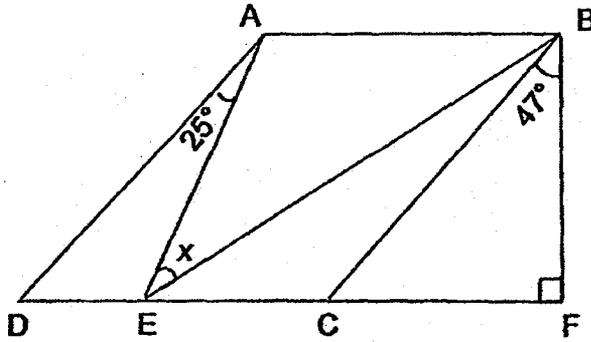
Answer : _____ [3]

8.   The average mass of 8 baskets of fruits at a zoo feeding station was 23 kg. Some baskets of fruits with an average mass of 20.4 kg were added. The average mass of all the baskets of fruits became 22 kg. How many baskets of fruits were added?

Answer : _____ [3]

9. In the figure below, ABCD is a parallelogram and AE = AB. ∠BFC is a right angle. ∠FBC = 47° and ∠EAD = 25°. Find ∠x.
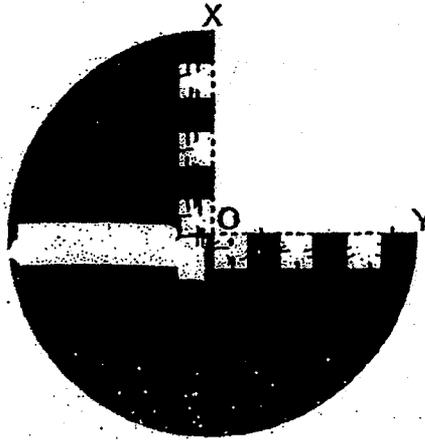
Answer : _____ [3]

8

10. The figure below is made up of three quadrants and six identical squares. Each side of the squares is 1 cm. The length of OX is 6 cm. Find the perimeter of the shaded part. Take the calculator value of π and give your answer correct to 2 decimal places.

Ans: _____ [3]

11. Amos and his sister shared $1674. Amos spent 25% of his money and his sister spent 70% of her money. After that, Amos had twice as much money left as his sister.

(a) How much did Amos have in the end?
(b) What was the percentage decrease in the total sum of money?

Ans: a) _____ [3]

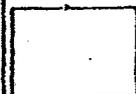b) _____ [2]

12. A bakery sold durian, chocolate and strawberry puffs in the ratio of 3 : 4 : 2. Each durian, chocolate and strawberry puff was sold for $5, $3 and $4. A total of $560 was collected on a Sunday afternoon. Find the amount of money collected from the sale of durian puffs.
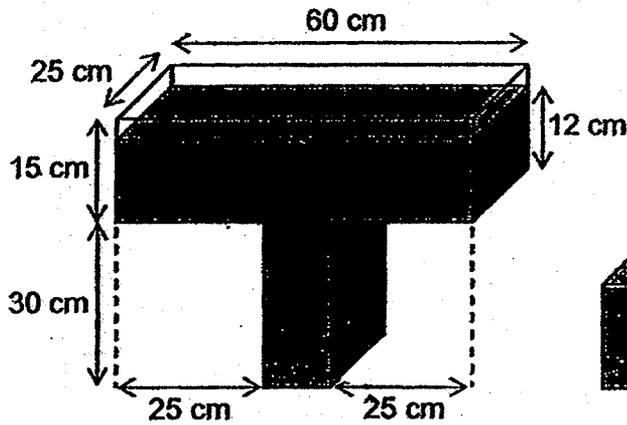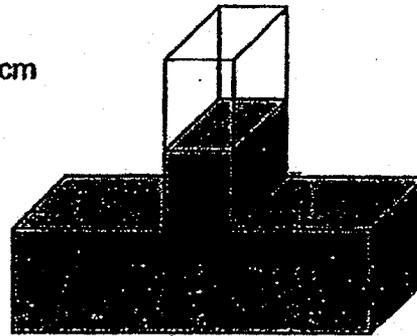
Ans : _____ [4]

13. Two identical T-shaped containers, P and Q, are shown below. Both of them have the same amount of water in it.

(a) Find the volume of the water in container P.
(b) Find the height of the water in container Q.
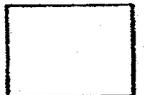
Container P

60 cm

25 cm

12 cm

15 cm

30 cm

25 cm   25 cm

Container Q

Answer : a) _____ [2]

b)_____ [3]

14. In a donation drive, a class of 40 boys and girls helped to distribute some food items. Each boy distributed 4 bags while each girl distributed 3 bags. The boys distributed 62 more bags than the girls. How many boys were there?

Answer: _____ [4]

15. Sam and Ben started swimming at the same time from the opposite ends of a 30-m swimming pool. Each boy would turn in the opposite direction and continue swimming upon reaching the end of the pool. The average speed of Sam was 1 m/s and the average speed of Ben was 0.6 m/s. How many times did they meet each other if they swam for 10 min? (Assuming that the turning time is neglected.)
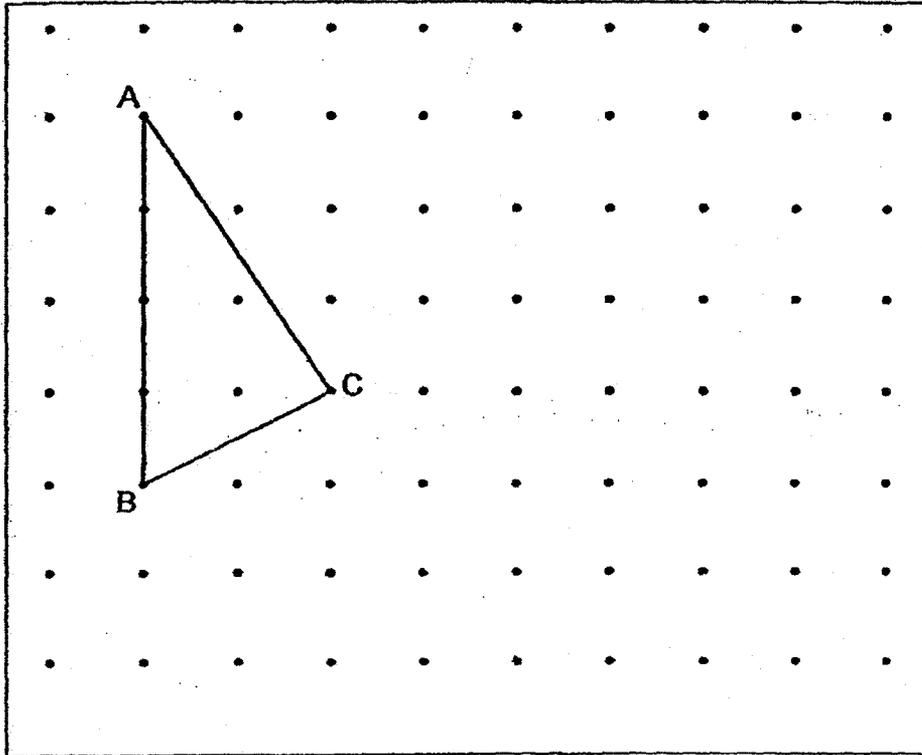
Answer : _____ [4]
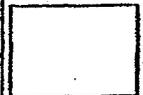
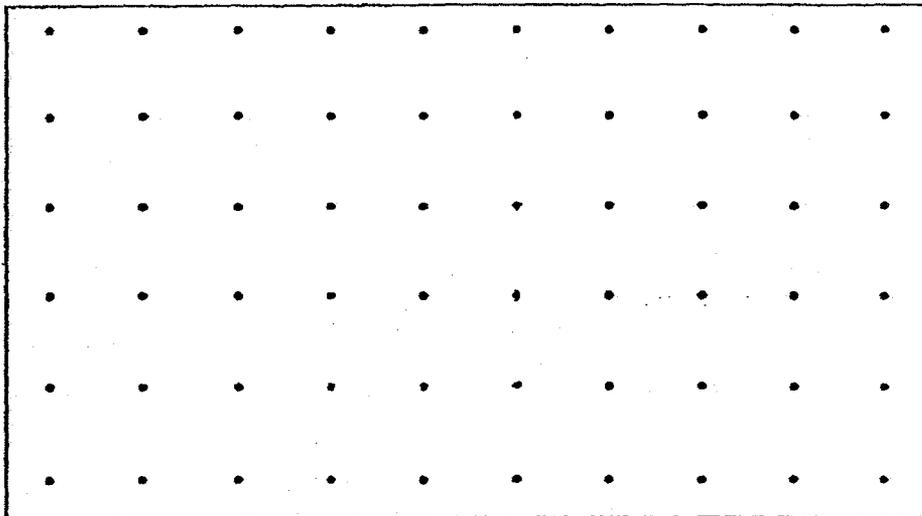16. The figure below shows a triangle ABC drawn on a grid.

a) BCD is another triangle with the same area as triangle ABC. Draw BCD on the grid below such that BCD does not overlap with ABC. [2m]

(b) Draw a 4-sided figure with the same area as triangle ABC in part (a). [2m]

17. 25% of Elle's money was spent on 5 files and 10 erasers. The cost of each file was twice the cost of each eraser. Elle bought some more erasers with 40% of her remaining money. How many erasers did she buy altogether?

Ans : _____ [4]

End of paper
Have you checked your work?

ANSWER KEY

YEAR   : 2018
LEVEL   : PRIMARY 6
SCHOOL   : ROSYTH SCHOOL
SUBJECT : MATHEMATICS
TERM   : PRELIMINARY EXAMINATION

PAPER 1 BOOKLET A

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

PAPER 1 BOOKLET B

Q16) 30.63

Q17) 250cm

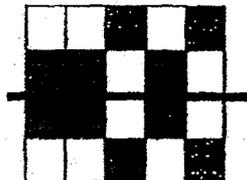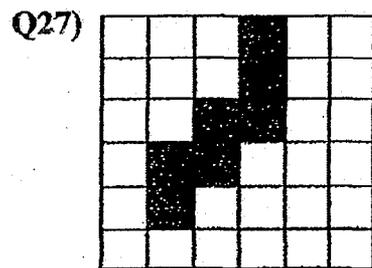Q18) 2.5

Q19) 200cm^3

Q20) 8 faces

Q21) 20

Q22) $6.80

Q23) 50 stickers

Q24) 35 sausages

Q25)

Q26) 7 cubes

Q27)

Q28) (2y + 1)

Q29) 168cm

Q30) $\frac{5}{24}$

PAPER 2

Q1) $\left(\frac{70-3w}{5}\right)$

Q2) 5kg

Q3) 236 points

Q4) 16 : 1

Q5) 31

Solutions to Word Problems

Rosyth Paper 2

P6 Mathematics SA2 2018

Show your working clearly in the space provided for each question and write your answers in the spaces provided.

6. Difference in sale price between apples and oranges = $315 - $225 = 90
Difference in cost between one apple and orange = $0.20

Number of oranges = 90 ÷ 0.20 = 450

Ans: 450

7. Ratio between number of Dawn's stickers vs number of Evelyn's stickes →
1 : 4 → 3 : 12 → 3u : 12u

After Dawn and Evelyn gave away $\frac{1}{3}$ and $\frac{3}{4}$ of their stickers respectively,

Number of stickers Dawn has left = 3u – 1u = 2u

Number of stickers Evelyn has left = 12u – 9u = 3u

2u + 3u = 90
5u = 90
u = 90 ÷ 5 = 18

Number of stickers they had at first = 3u + 12u = 15u = 15 x 18 = 270

Ans: 270 stickers

8. Total mass of 8 baskets = 23 x 8 = 184 kg

Let n = number of fruit baskets added

Mass of additional fruit baskets = 20.4 x n

Total mass after adding additional baskets =
(8 + n) x 22 = 184 + 20.4n

176 + 22n = 184 + 20.4n
22n – 20.4n = 184 – 176
1.6n = 8
n = 8 ÷ 1.6 = 5

Number of additional fruit baskets = 5

Ans: 5 baskets

---

9. As AD is parallel to BC

∠DAB = 47 + 90 = 137°

∠EAB = 137 – 25 = 112°

△ABE is an isosceles triangle where AEB = ABE

X = (180 – 112) ÷ 2 = 34°

Ans: 34°

10. radius = 6 cm

Perimeter of 3 quadrants = $\dfrac{3}{4}$ x π x 6 x 2 = 9π cm

Perimeter of jagged edge = 4 x 6 = 24 cm

Total perimeter = 9 x 3.142 + 24 = 52.274 ≈ 52.27 cm

Ans: 52.27 cm

---

11. a)
Let amount his sister had left = u
Amount Amos had left = 2u

75% → 2u

100% → 100 ÷ 75 x 2u = $\dfrac{8}{3}$ u = amount Amos had at first

30% → u

100% → 100 ÷ 30 x u = $\dfrac{10}{3}$ u = amount his sister had at first

$\dfrac{8}{3}$ u + $\dfrac{10}{3}$ u = 1674

6u = 1674
u = 1674 ÷ 6 = 279

Amount Amos has in the end = 2u = 2 x 279 = $558

b)
Percentage decrease = (6u – 3u) ÷ 6u = 50%

Ans: (a) $558

(b) 50%

:

12.   Ratio of number of durian, chocolate and strawberry puffs → 3u : 4u : 2u
Ratio of total cost of durian, chocolate and strawberry puff →
3u x 5 : 4u x 3 : 2u x 4 → 15u : 12u : 8u

15u + 12u + 8u = 560
35u = 560
u = 560 ÷ 35 = 16

Sale of durian puffs = 15u = 15 x 16 = $240

Ans: $240

13.   a)
Volume of container P = 10 x 30 x 25 + 60 x 12 x 25 = 25,500 cm^3

b)
Volume of bottom part of container Q = 60 x 15 x 25 = 22,500 cm^3

Volume of top part of container Q = 25,500 – 22,500 = 3000 cm^3

Height of water in top part of container Q = 3000 ÷ (10 x 25) = 12 cm

Total height of water in container Q = 12 + 15 = 27 cm

Ans: (a) 25,500 cm^3

(b) 27 cm

14. Let number of boys = u
Number of girls = 40 – u

Number of bags distributed by boys = 4u
Number of bags distributed by girls = 3 x (40 – u) = 120 – 3u

Difference in bags distributed = 4u – (120 – 3u) = 7u – 120 = 62
7u = 62 + 120 = 182
u = 26
Number of boys =26

<div align="right">Ans: 26 boys</div>

15. Number of seconds for Sam to swim one length of the pool = 30 ÷ 1 = 30s
Number of seconds for Ben to swim one length of the pool = 30 ÷ 0.6 = 50s
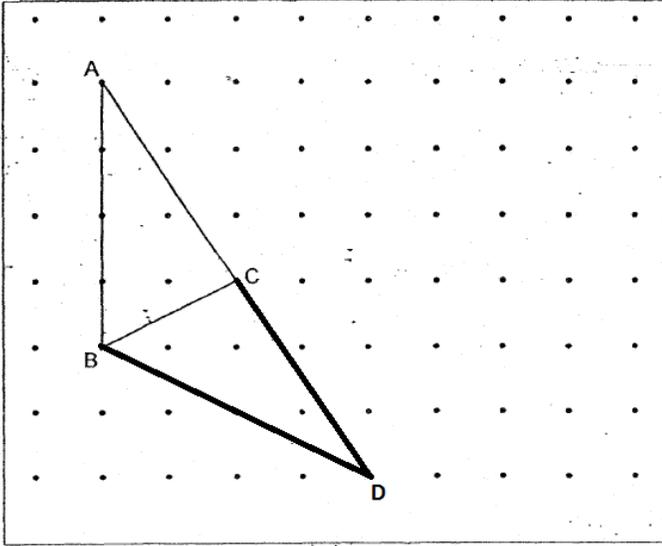
Number of laps Sam swim in 600 secs (10 mins) = 600 ÷ 30 = 20 laps
Number of laps Ben swim in 600 secs (10 mins) = 600 ÷ 50 = 12 laps

The faster swimmer met slower swimmer exactly once per lap,
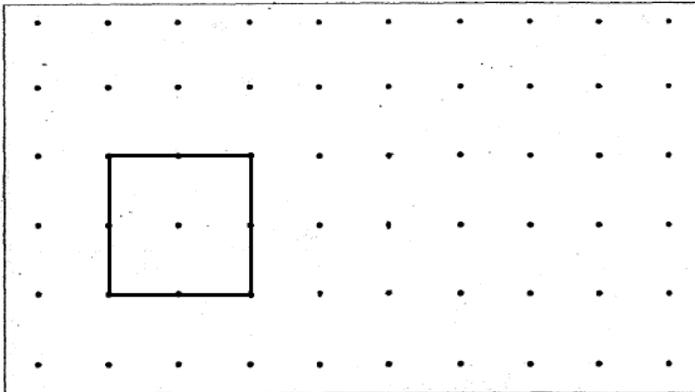While slower swimmer met faster swimmer once or twice per lap, that is not exact.

Therefore number of times they met = 20

<div align="right">Ans: 20</div>

16.   a)

b)

17.   Let Cost of 1 eraser = u
Cost of 1 file = 2u
Cost of 5 files and 10 erasers = 5 x 2u + 10 x u = 20u
25% of Elle's money = 20u

40% of 75% Elle's money = 30%
30% of Elle's money = 30 ÷ 25 x 20u = 24u

Number of erasers she bought with 24u = 24u ÷ u = 24

Total number of erasers bought = 10 + 24 = 34

Ans: 34 erasers