MARIS STELLA HIGH SCHOOL (PRIMARY)

SEMESTRAL ASSESSMENT 1

PRIMARY 6 MATHEMATICS

8 MAY 2018

PAPER 1

(BOOKLET A)

15 questions

20 marks

1 hour

Total Time For Booklets A and B: 50 min

NAME : _____ ( )

CLASS : PRIMARY 6 _____

INSTRUCTIONS TO CANDIDATES

1. DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.

2. FOLLOW ALL INSTRUCTIONS CAREFULLY.

3. ANSWER ALL QUESTIONS.

4. SHADE YOUR ANSWERS IN THE OPTICAL ANSWER SHEET (OAS) PROVIDED.

5. YOU ARE NOT ALLOWED TO USE A CALCULATOR.

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 correct oval (1, 2, 3 or 4) on the Optical Answer Sheet. (20 marks)

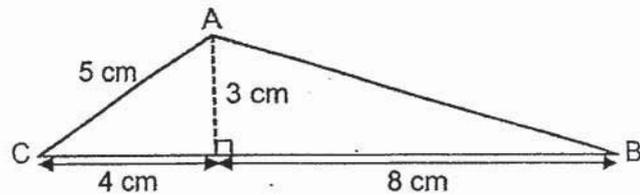1. Round off 21 649 to the nearest thousand.

    (1)   20 000
    (2)   21 600
    (3)   21 650
    (4)   22 000

2. $0.48 \div 10 = 4.8 \div$ _____.

    (1)   0.01
    (2)   0.10
    (3)   100
    (4)   1000
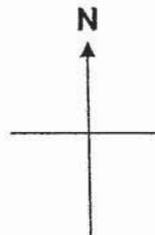
3. What is the area of Triangle ABC as shown in the figure?

    (1)   18cm^2
    (2)   20cm^2
    (3)   30cm^2
    (4)   36cm^2

4. John is facing south after turning 270° in anti-clockwise direction. What direction was John facing at first?

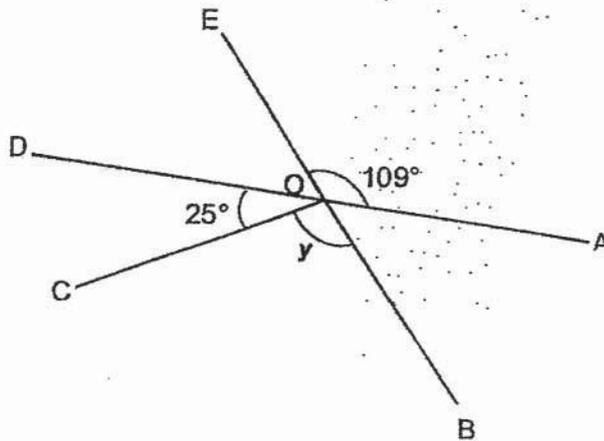   (1)   East
    (2)   North
    (3)   South
    (4)   West

5. $\frac{4}{5}$ of a number is 40. What is the number?

   (1)   32
   (2)   50
   (3)   160
   (4)   200

6. How many sixths are there in $2\frac{2}{3}$?
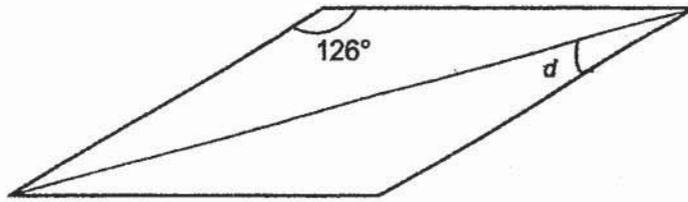
   (1)   8
   (2)   12
   (3)   14
   (4)   16

7. AOD and BOE are straight lines. Find $\angle y$ in the figure shown.

   (1)   46°
   (2)   71°
   (3)   84°
   (4)   109°

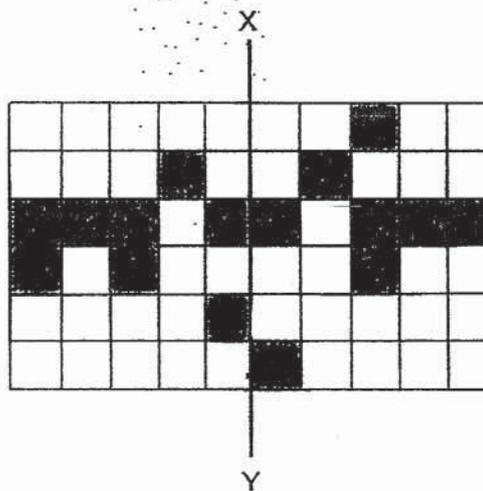8.   The figure shows a rhombus. Find ∠d in the figure shown.

(1)   27°
(2)   54°
(3)   63°
(4)   126°

Paul had some marbles. He could pack them equally into 6 or 9 bags with no marbles left over. What is the least number of marbles Paul had?

(1)   15
(2)   18
(3)   36
(4)   54

10.   What is the least number of squares that must be shaded in the figure below so that XY is a line of symmetry?

(1)   1
(2)   2
(3)   3
(4)   4

11. The total mass of 600 paper clips is 540 g.
     What is the total mass of 30 such paper clips?

     (1)   0.9 g
     (2)   2.7 g
     (3)   9 g
     (4)   27 g

12. Miley had three times as many chocolates as Cyrus. Taylor had half the number of
     chocolates as Miley. Miley gave half of her chocolates to Taylor.
     Find the ratio of the number of chocolates Miley had to the number of chocolates Cyrus
     had to the number of chocolates ~~Tyler~~ had.
                                    Taylor

     (1)   1 : 1 : 2
     (2)   3 : 2 : 6
     (3)   3 : 5 : 3
     (4)   6 : 2 : 3

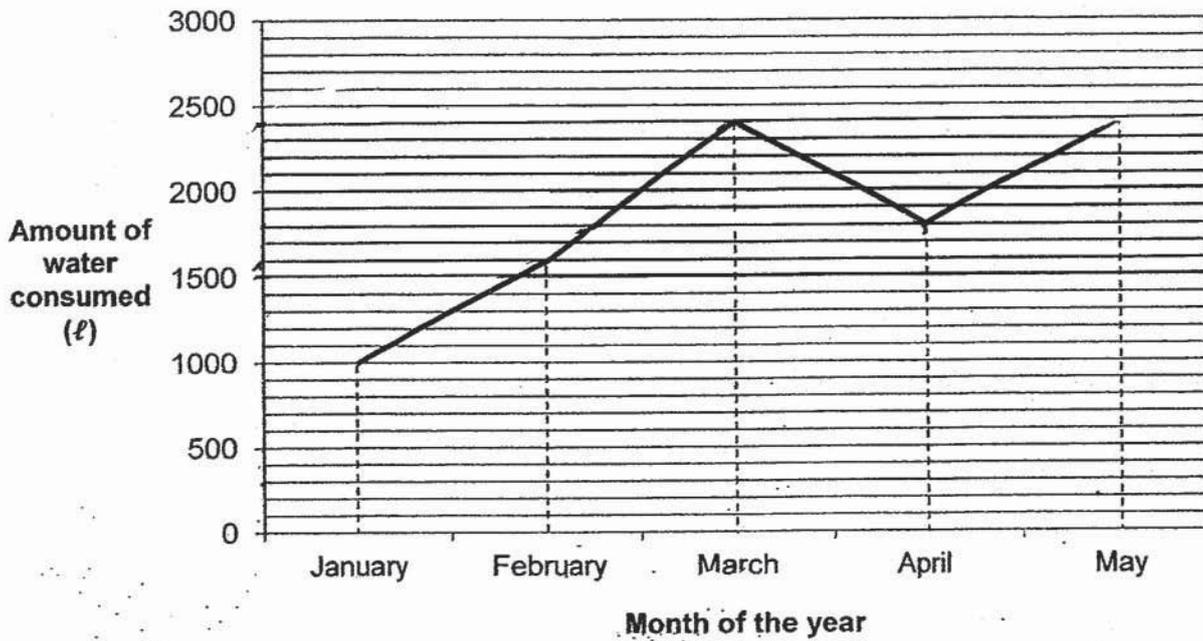13. Jenny bought 2 toy cars and 3 books.

     $4z each $5 each
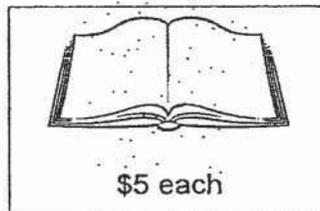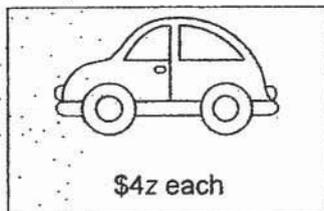
     She gave the cashier $50. How much change did she receive?

     (1) $ (50 − 23z)
     (2) $ (45 − 4z)
     (3) $ (40 − 12z)
     (4) $ (35 − 8z)

4

Study the line graph carefully. The graph shows the monthly water consumption by a company. Answer questions 14 and 15 based on the graph.

14. Which month saw a 60% increase in the consumption of water from the previous month?

    (1)   February
    (2)   March
    (3)   April
    (4)   May

15. The amount of water used by the company in June was $\frac{2}{3}$ the amount of water used in May. How much water did the company use in June?

    (1)   800 ℓ
    (2)   1200 ℓ
    (3)   1600 ℓ
    (4)   3600 ℓ

MARIS STELLA HIGH SCHOOL (PRIMARY)
SEMESTRAL ASSESSMENT 1
PRIMARY 6 MATHEMATICS
8 MAY 2018
PAPER 1
(BOOKLET B)

15 questions

25 marks

Total Time For Booklets A and B: ~~50 min~~ *1 hour*

NAME : _____ (   )

CLASS : PRIMARY 6 _____

INSTRUCTIONS TO CANDIDATES

1. DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.
2. FOLLOW ALL INSTRUCTIONS CAREFULLY.
3. ANSWER ALL QUESTIONS.
4. WRITE YOUR ANSWERS IN THIS BOOKLET.
5. YOU ARE NOT ALLOWED TO USE A CALCULATOR.

MARKS OBTAINED FOR		
PAPER 1 (BOOKLET A)	/ 20	Parent's Signature:
PAPER 1 (BOOKLET B)	/ 25	_____
TOTAL	/ 45	Date: _____

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. (5 marks)

16. Express $1\frac{2}{7}$ as a decimal, correct to 2 decimal places

Answer : _____

17. Arrange the numbers from the greatest to the smallest.

0.805 , $\frac{7}{8}$, 0.85

Answer : _____

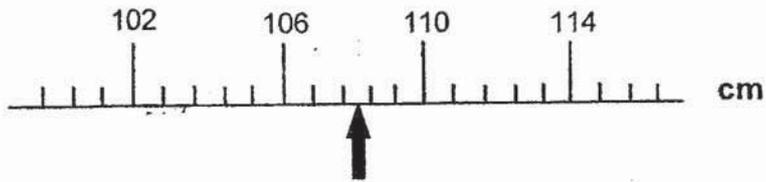18. Find the volume of a 8 cm-cube.

Answer : _____ cm^3

19. The mass of Alvin is $\frac{6}{7}$ that of Bobby. Find the ratio of Alvin's mass to their total mass.

Answer · _____

SCORE

(Go on to the next page)

20. What is the reading shown on the scale below?

```
      102        106       110       114
   ┬ ┬ ┬ ┬ ┬ ┬ ┬ ┬ ┬ ┬ ┬ ┬ ┬ ┬ ┬ ┬ ┬ ┬ ┬ ┬ ┬   cm
                   ▲
```
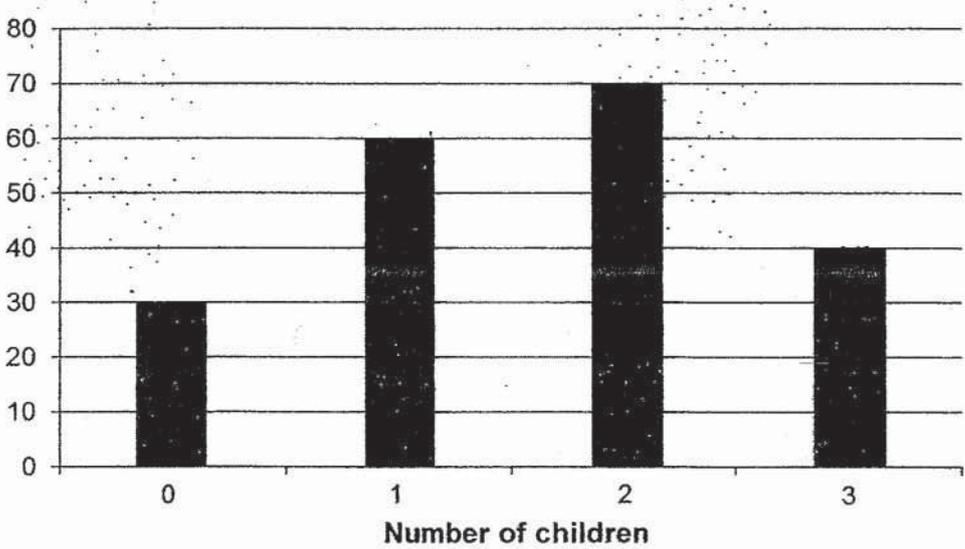
Answer : _____ cm

SCORE

Questions **21** to **30** 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 (20 marks)

21. Siti paid $200 for a watch. She received a 20% discount for the watch. How much was the original price of the watch?

Answer : $ _____

22. The graph below shows the number of children from 220 families in a neighbourhood. 200
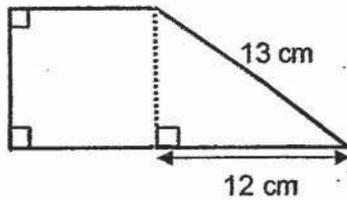

What fraction of the families had at least 2 children?

Answer : _____

8

SCORE

(Go on to the next page)

23. A painter mixed blue and yellow paint in the ratio 3 : 7 to obtain green paint. He got 40 ℓ of green paint. How much yellow paint did he use?

Answer : _____ ℓ

24. The figure below is made up of a square and a right-angled triangle. Its perimeter is 40 cm. Find the area of the square.
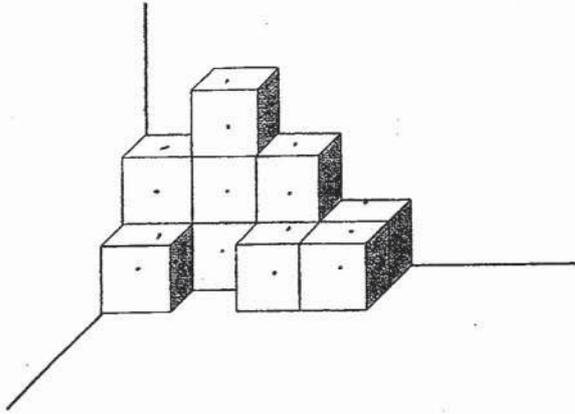

Answer : _____ cm²

25. Amin and Bala had a total of $220. After Amin spent $\frac{2}{5}$ of his money and Bala spent $\frac{1}{2}$ of his money, they had an equal amount of money left.
How much did Amin have at first?

Answer : $ _____

SCORE
(Go on to the next page)

26. The solid below is made up of 11 unit cubes glued together. It is fixed to a corner of a wall. All exposed area of the solid is then painted. What is the area covered in paint?
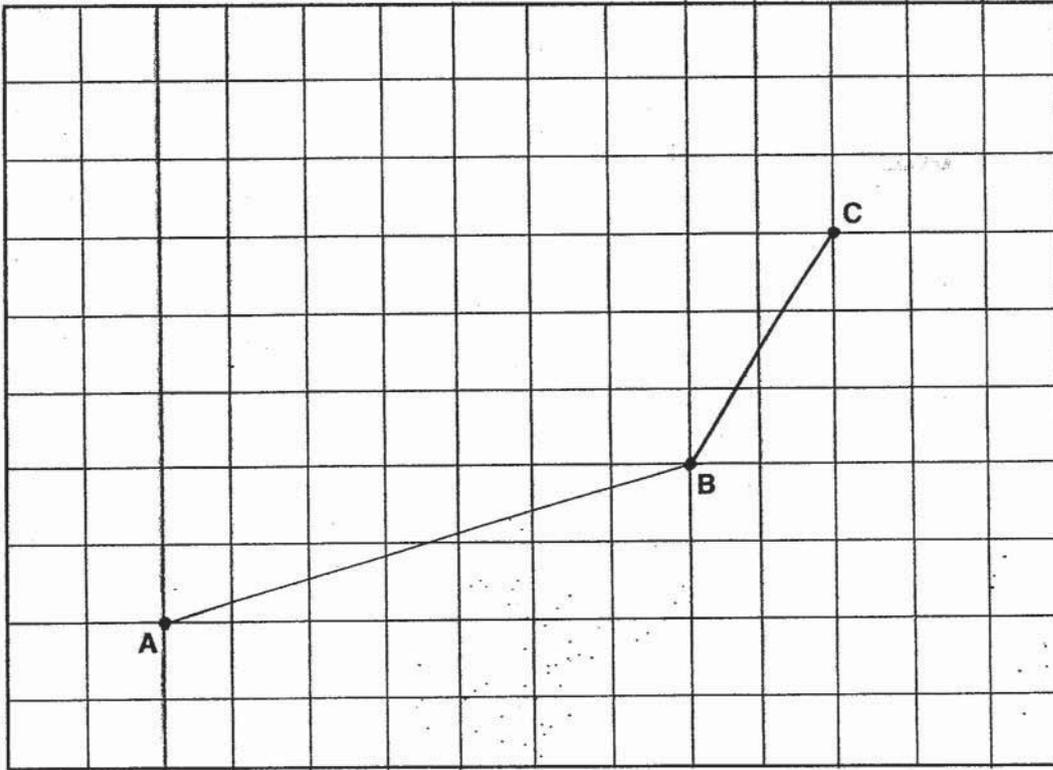
Answer : _____ cm^2

27. The table below shows the amount each of the four boys paid for a present.
The present costs $120.
Which two boys paid a total of 35% of the cost of the present?

Name	Amount paid ($)
Alan	43
Ben	35
Chris	26
Dave	16

Answer : _____ and _____

SCORE

(Go on to the next page)
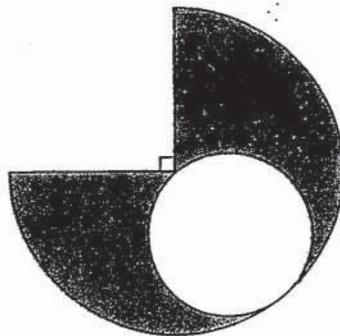
28. AB and BC are two sides of a parallelogram. Complete the parallelogram by drawing the other two sides in the square grid below.

29. The figure below is made up of part of a big circle with radius 4 cm and a small circle. Find the shaded area in terms of π.

Answer : _____ cm²

11

SCORE

(Go on to the next page)
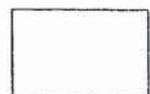
30. A class of 50 students had to fold origami rabbits. 5 of them were not present and the rest of the students had to fold 2 more origami rabbits each.
How many origami rabbits did each student have to fold at first?

Answer : _____

End of Booklet B

MARIS STELLA HIGH SCHOOL (PRIMARY)
SEMESTRAL ASSESSMENT 1
PRIMARY 6 MATHEMATICS
8 May 2018
PAPER 2

17 questions
55 marks
Time: 1 h 30 min

NAME : _____ (   )

CLASS : PRIMARY 6 _____

INSTRUCTIONS TO CANDIDATES

1. DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.
2. FOLLOW ALL INSTRUCTIONS CAREFULLY.
3. ANSWER ALL QUESTIONS.
4. SHOW YOUR WORKINGS CLEARLY AS MARKS ARE AWARDED FOR CORRECT WORKING.
5. WRITE YOUR ANSWERS IN THIS BOOKLET.
6. YOU ARE **ALLOWED** TO USE A CALCULATOR.

MARKS OBTAINED FOR		
PAPER 1 (BOOKLET A & B)	/ 45	Parent's Signature:
PAPER 2	/ 55	_____
TOTAL	/100	Date: _____

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)

1. The graph below shows the number of pens sold from Monday to Friday.

| Day	Monday	Tuesday	Wednesday	Thursday	Friday
Number of pens	200	120	160	?	180

The average number of pens sold over the 5 days was 150.
How many pens were sold on Thursday?
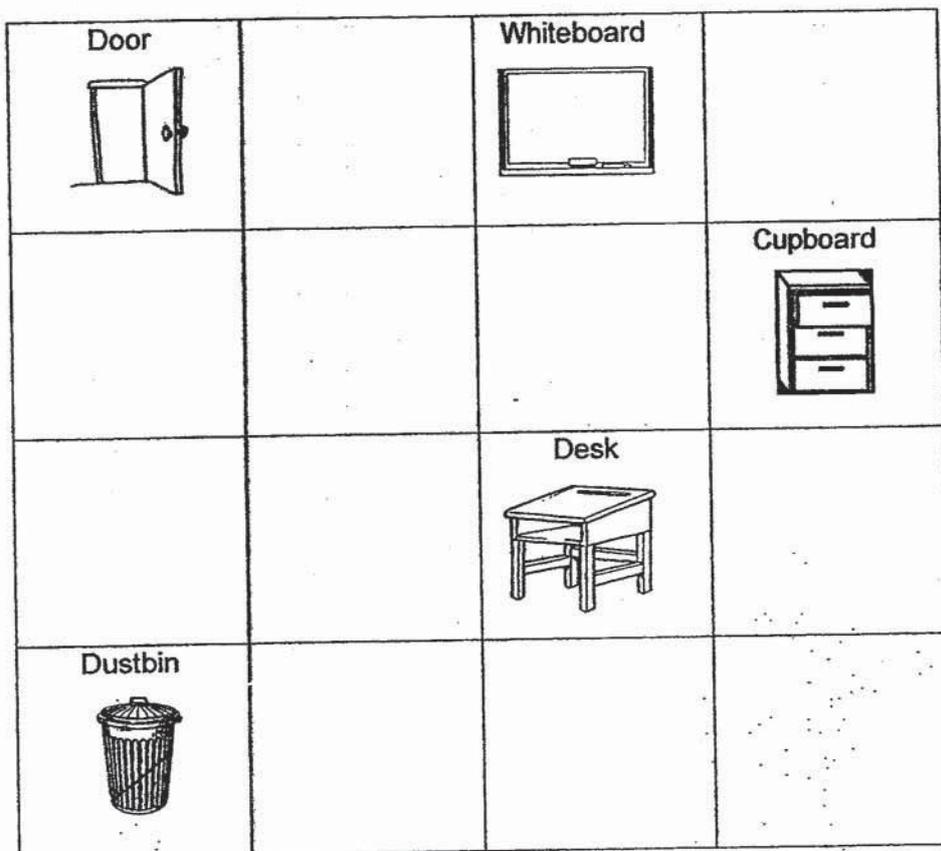
Answer: _____

2. Ali, Bryan and Charles have some marbles. Ali has y marbles. Bryan has twice as many marbles as Ali. Charles has 8 more marbles than Bryan.

(a) Express the number of marbles Charles has in terms of y.

(b) If $y = 9$, find the total number of marbles the 3 boys have.
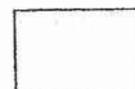
Answer: (a) _____

(b) _____

1

SCORE
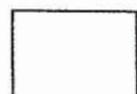
3. The square grid below shows the layout of a classroom. The door is north of the dustbin.

N

Door		Whiteboard	
			Cupboard
		Desk	
Dustbin			

(a) In which direction is the desk from the cupboard?

(b) The teacher placed a chair north of the dustbin and south-west of the whiteboard. Mark the box in the grid where the chair is with a tick (✓).

Answer: (a) _____

SCORE

4. The town council built lamp posts at equal distances along a straight road. The 4th and 7th lamp posts were $1\dfrac{3}{4}$ km apart. The total length between the 1st and the last lamp posts was **14** km. How many lamp posts were there?
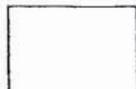
Answer: _____

5. The table below shows the parking charges at a shopping mall.

First hour	$2
Subsequent half hour or part thereof	$0.65

John paid $5.25 for parking at the shopping mall. At most, how long did he park his car there?

Answer : _____ h

3

SCORE

(Go on to the next page)

For Questions **6** to **17**, show your working clearly in the space below each question and write your answer in the spaces provided. The number of marks available is shown in the brackets [ ] at the end of each question or part-question. (45 marks)

6. The mass of a container of sand when $\frac{1}{2}$ filled is 4.5 kg. It has a mass of 5.7 kg when it is $\frac{4}{5}$ filled with sand. What is the mass of the empty container?

Answer: _____ [3]

7. Alice and Bala played a game for 10 rounds. In each round, the winner scored 2 points and 2 points was deducted from the loser. At the end of the game, Bala's total score was 4 points. How many rounds did Alice lose?
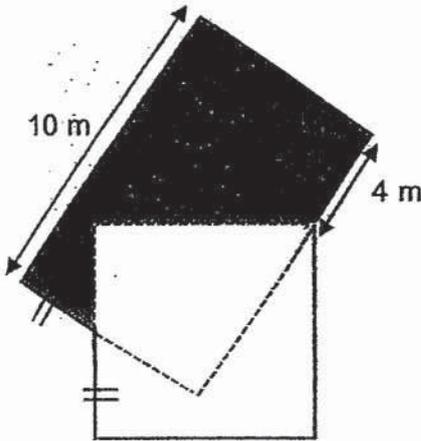
Answer : _____ [3]

8. Muthu mixed 1.7 kg of red rice, 2.45 kg of brown rice and 2.6 kg white rice in a sack. He then repacked the rice in the sack into smaller packets. Each smaller packet weighed 250 g and he sold each packet for $2.40. How much did he collect after he sold all the packets?

Answer : _____ [3]

9. The figure is made up of a square and a rectangle. The perimeter of the figure is 46 m. The length of the rectangle is 10 m. The breadth of the rectangle is equal to the side of the square. Find the area of the shaded portion.

10 m

4 m

Answer : _____ [3]

SCORE
(Go on to the next page)

10. Joshua used ice cream sticks to form the patterns shown below.
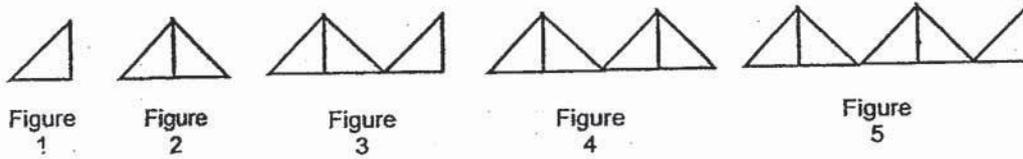He recorded the number of ice cream sticks he used for each figure.

Figure 1   Figure 2   Figure 3   Figure 4   Figure 5

Figure	Number of ice cream sticks
1	3
2	5
3	8
4	10
5	13
6	
7	(a)

(a) How many ice cream sticks did Joshua use to form Figure 7?

(b) Joshua used 35 ice cream sticks to form a figure. What would the figure number be?
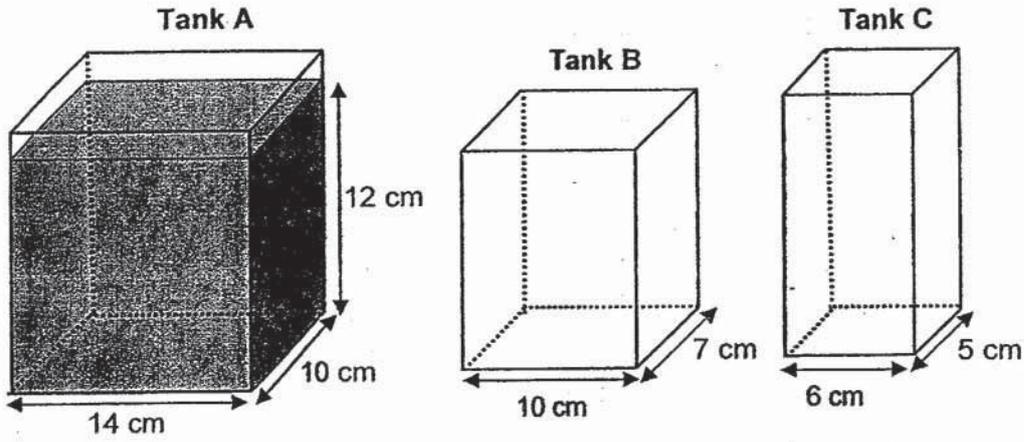
Answer: (a) _____ [1]

(b) Figure _____ [2]

SCORE

11: Krissy mixed $\frac{5}{6}$ℓ of water and $1\frac{1}{2}$ℓ of cordial to make fruit punch. She drank $\frac{2}{5}$ of the fruit punch and poured the remaining fruit punch into $\frac{2}{5}$ℓ-bottles for sale. How much fruit punch was left over?

Answer : _____ [3]

SCORE
(Go on to the next page)

12. Tank A is filled with water to a height of 12 cm. Some water in Tank A is then poured into 2 empty rectangular tanks, B and C, such that the heights in all the 3 tanks are equal. Find the volume of water poured out of Tank A.
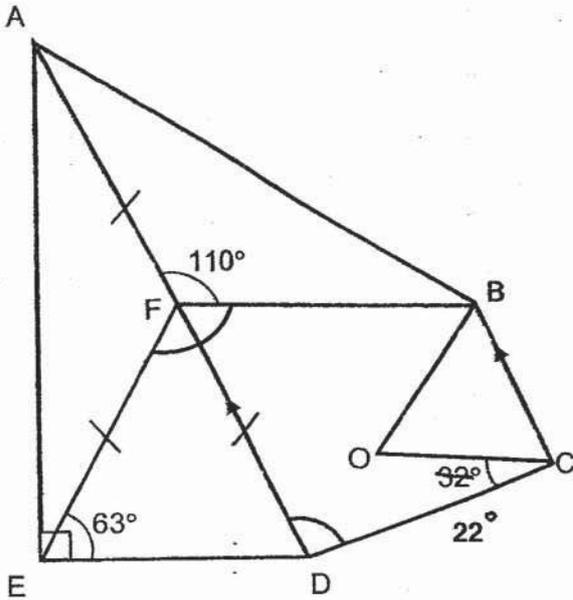
Tank A

Tank B

Tank C

12 cm

10 cm

14 cm

7 cm

10 cm

5 cm

6 cm

Answer : _____ [4]

SCORE

13. The figure below is made up of Trapezium BCDF and right-angled triangle AED. DEF and AEF are isosceles triangles and BOC is an equilateral triangle.

(a) Find ∠FDC

(b) Find ∠EFB

Answer: (a) _____ [1]

(b) _____ [3]

SCORE

(Go on to the next page)

14. Derek's shop sells shirts and pants. A pair of pants is sold at $48 and a shirt is sold at $\frac{3}{4}$ the price of a pair of pants. On Friday, Derek sold $\frac{2}{3}$ of the clothing in his shop and collected $3672. $\frac{2}{5}$ of the clothing sold were pants.

(a) How many shirts did Derek sell on Friday?

(b) How many clothing were left unsold in the shop after Friday?

Answer: (a) _____ [3]

(b) _____ [2]

SCORE

15. There were 1375 adults at a conference. The ratio of the number of women to the number men at the conference was 2 : 3. After an hour, 40% of the women left the conference. Two hours later, 20% of the remaining women left the conference.

(a) How many women stayed on at the conference?

(b) What percentage of the people who stayed on at the conference were women? Give your answer correct to 1 decimal place.
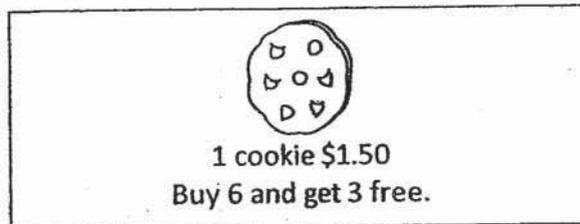
Answer: (a) _____ [3]

(b) _____ [2]

SCORE

(Go on to the next page)

16. Mr Lee baked some cookies for sale. In the morning, Jason bought $\frac{1}{4}$ of the cookies and received 9 cookies free. In the afternoon, Adam bought $\frac{1}{3}$ of the remaining cookies and received 2 cookies free. Mr Lee had 118 cookies left by evening.

(a) How many cookies did Mr Lee bake?
(b) In the evening, Mr Lee put up a sign as shown below.

1 cookie $1.50
Buy 6 and get 3 free.

He sold all 118 cookies in the evening, what was the least amount that he earned that **evening**?

Answer: (a) _____ [2]

(b) _____ [2]

12
(Go on to the next page)

SCORE
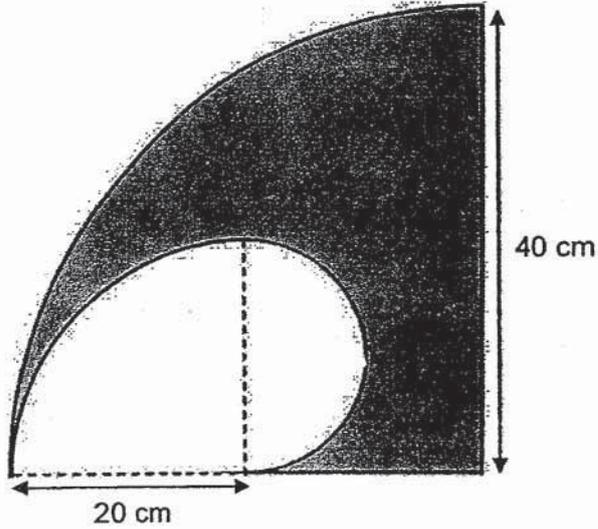
17. A quadrant and semi-circle are cut out from a big quadrant as shown below.
    (a) Find the perimeter of the remaining figure
    (b) Find the area of the remaining figure.
    (Take $\pi = 3.14$)

40 cm

20 cm

Answer: (a) _____ [3]

(b) _____ [2]

Answer Key & Worked Solutions

Maris Stella Paper

P6 Mathematics SA1 2018

Paper 1

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
4	3	1	1	2	4	3	1	2	4

Q11	Q12	Q13	Q14	Q15
4	2	4	1	3

Q16) 1.29

Q17) $\frac{7}{8}$, 0.85, 0.805

Q18) 512 cm^3

Q19) 6 : 13

Q20) 108 cm

Q21) $250

Q22) $\frac{11}{20}$
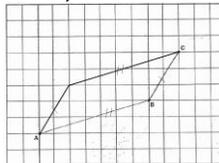
Q23) 28

Q24) 25 cm^2

Q25) $100

Q26) 22 cm^2

Q27) Chris and Dave

Q28)
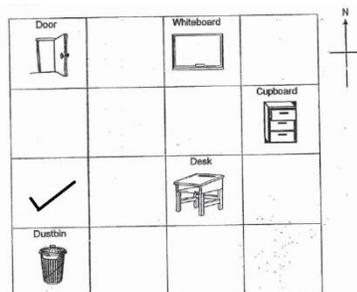

Q29) 8π

Q30) 18

Paper 2

Q1.   150 x 5 = 750
       750 – 200 – 120 – 160 – 180 = 90

Q2.   (a)   2y + 8
       (b)   5y + 8
              = 5 x 9 + 8
              = 53

Q3.   (a)   South-west
       (b)

Q4. $7 - 4 = 3$

$1\dfrac{3}{4} \div 3 = \dfrac{7}{12}$

$14 \div \dfrac{7}{12} = 24$ (gap)

$24 + 1 = 25$

Q5. $1 + 5 \times \dfrac{1}{2} = 3.5\text{h}$

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

6.   Mass of container 50% filled with sand = 4.5 kg

Mass of container 80% filled with sand = 5.7 kg

Mass of 30% sand = 5.7 – 4.5 = 1.2 kg

Mass of 10% sand = 1.2 ÷ 3 = 0.4 kg

Mass of 50% sand = 0.4 x 5 = 2 kg

Mass of container = 4.5 – 2 = 2.5 kg

Ans: 2.5 kg

7.   Score if Bala won all the games = 20

Excess = 20 – 4 = 16

Difference of score between winner and loser = 2 + 2   = 4

Number of times Bala lost = 16 ÷ 4 = 4

Number of times Alice lost = 10 – 4 = 6

Ans: 6

8.   Total mass of mixed rice = 1.7 + 2.45 + 2.6 = 6.75 kg

        Number of packets of 250g rice = 6.75 ÷ 0.25 = 27

        Total sales = 27 x 2.4 = $64.80

                                                              Ans: $64.80

---

9.   Let breadth of rectangle = length of square = u

        Perimeter of figure = 10 + 4 + u + u + u + $\frac{1}{2}$ u + $\frac{1}{2}$ u = 46

        4u = 32

         u = 8 cm

        $\frac{1}{2}$ u = 4 cm

        Area of unshaded part of rectangle = $\frac{1}{2}$ x 4 x 8 + $\frac{1}{2}$ x 4 x 6 = 28 cm^2

        Shaded area = 10 x 8 – 28 = 52 cm^2

                                                              Ans: 52 cm^2

---

10. a)

Number of ice cream sticks → 3, 5, 8, 10, 13, 15, 18

Number of icre cream sticks to form Figure 7 = 18

b)

Number of ice cream sticks → 3, 5, 8, 10, 13, 15, 18, 20, 23, 25, 28, 30, 33, 35

Figure 14 used 35 ice cream sticks

Ans: (a) 18
(b) Figure 14

11. Volume of mixture = $\frac{5}{6}$ + $\frac{3}{2}$ = $\frac{5}{6}$ + $\frac{9}{6}$ = $\frac{14}{6}$ ℓ

Remaining fruit punch = $\frac{3}{5}$ x $\frac{14}{6}$ = $\frac{7}{5}$ ℓ

Number of bottles = $\frac{7}{5}$ ÷ $\frac{2}{5}$ = 3 remainder $\frac{1}{5}$ ℓ

Ans: $\frac{1}{5}$ ℓ

12. Volume of water in Tank A at first = 12 x 14 x 10 = 1680 cm^3

Total base area = 14 x 10 + 7 x 10 + 6 x 5 = 240 cm^2

Final height of water in 3 tanks = 1680 ÷ 240 = 7 cm

Drop in height of Tank A = 12 – 7 = 5 cm

Volumen poured out of Tank A = 5 x 14 x 10 = 700 cm^2

Ans: 700 cm^2

---

13. a)
∠BCD = 60 + 22 = 82°

∠FDC = 180 – 82 = 98°

b)
∠EFD = 180 – 63 – 63 = 54°

∠BFD = 180 – 110 = 70°

∠EFD = 54 + 70 = 124°

Ans: (a) 98°

(b) 124°

---

14. a)

Let number of pants sold = 2u

Number of shirts sold = 3u

2u x 48 + 3u x 36 = 3672

204u = 3672

u = 18

Number of shirts sold = 3u = 3 x 18 = 54

b)

Number of clothing sold on Friday = 5u = 5 x 18 = 90

$\frac{2}{3}$ of clothing in shop = 90

$\frac{1}{3}$ of clothing left unsold = 90 ÷ 2 = 45

Ans: (a) 54

(b) 45

15. a)

Number of women at conference at first = $\frac{2}{5}$ x 1375 = 550

After an hour remaining women = 0.6 x 550 = 330

Two hours later, number of women left = 0.8 x 330 = 264

b)

Number of men at conference = $\frac{3}{5}$ x 1375 = 825

Total number who stayed at conference = 825 + 264 = 1089

Percentage of women who stayed = 264 ÷ 1089 x 100 = 24.2%

Ans: (a) 264

(b) 24.2%

16. a)

$\frac{2}{3}$ of remainder = 118 + 2 = 120

$\frac{1}{3}$ of remainder = 120 ÷ 2 = 60

$\frac{3}{3}$ of remainder = 60 x 3 = 180

$\frac{3}{4}$ of all cookies = 180 + 9 = 189

$\frac{1}{4}$ of all cookies = 189 ÷ 3 = 63

$\frac{4}{4}$ of cookies baked = 63 x 4 = 252

b)
Cost of set of 9 cookies = $1.50 x 6 = $9
Number of sets of 9 cookies sold = 118 ÷ 9 = 13 remainder 1 cookie

Least sales amount = 13 x 9 + 1.50 = $118.50

Ans: (a) 252

(b) $118.50

17. a)

Circumference of large quadrant = $\frac{1}{4}$ x π x 80 = 20π cm

Circumference of medium quadrant = $\frac{1}{4}$ x π x 40 = 10π cm

Circumference of small semi-circle = $\frac{1}{2}$ x π x 20 = 10π cm

Perimeter of remaining figure = 20π + 10π + 10π + 40 + 20 = 40 π + 60

= 185.6 cm

b)

Area of large quadrant = $\frac{1}{4}$ x π x 40 x 40 = 400 π cm^2

Area of medium quadrant = $\frac{1}{4}$ x π x 20 x 20 = 100 π cm^2

Area of small semi-circle = $\frac{1}{2}$ x π x 10 x 10 = 50 π cm^2

Area of remaining figure = 400 π - 100 π - 50 π = 250 π = 785 cm^2

Ans: (a) 185.6 cm

(b) 785 cm^2