

# METHODIST GIRLS' SCHOOL (PRIMARY)

Founded in 1887



## END-OF-YEAR EXAMINATION 2018 PRIMARY 5 MATHEMATICS

### PAPER 1 BOOKLET A

Total Time for Booklets A and B: 1 hour

#### INSTRUCTIONS TO CANDIDATES

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

Follow all instructions carefully.

Answer all questions.

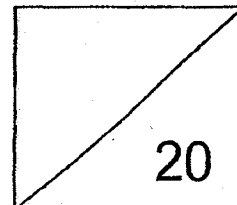
Shade your answers in the Optical Answer Sheet (OAS) provided.

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

Name: \_\_\_\_\_ (    )

Class: Primary 5. \_\_\_\_\_

Date: 26 October 2018



This booklet consists of 6 printed pages including this page.

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)

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1 Find the value of  $5 \times 12 + 48 \times 10 \div 5$ .

- (1) 156
- (2) 216
- (3) 540
- (4) 600

2  $692 \times 500 = 700 \times 500 - \square$

What is the missing number in the box?

- (1) 400
- (2) 900
- (3) 4000
- (4) 9000

3 Mother used  $\frac{1}{3}$  m of cloth to make a doll and she had  $\frac{1}{8}$  m of cloth left. How much cloth did she have at first?

- (1)  $\frac{2}{11}$  m
- (2)  $\frac{1}{24}$  m
- (3)  $\frac{5}{24}$  m
- (4)  $\frac{11}{24}$  m

4 What is  $\frac{4}{25}$  in decimal?

- (1) 6.25
- (2) 1.6
- (3) 0.16
- (4) 0.016

5  $4 \div 1000 = 0.4 \div \square$

What is the missing number in the box?

- (1) 0.01
- (2) 0.1
- (3) 10
- (4) 100

6 8 out of 40 cats are male and the rest are female. What percentage of the cats is male?

- (1) 20 %
- (2) 25 %
- (3) 80 %
- (4) 83 %

7 A vase cost \$50 before GST. A customer bought the vase and paid an additional 7% GST. How much was the GST?

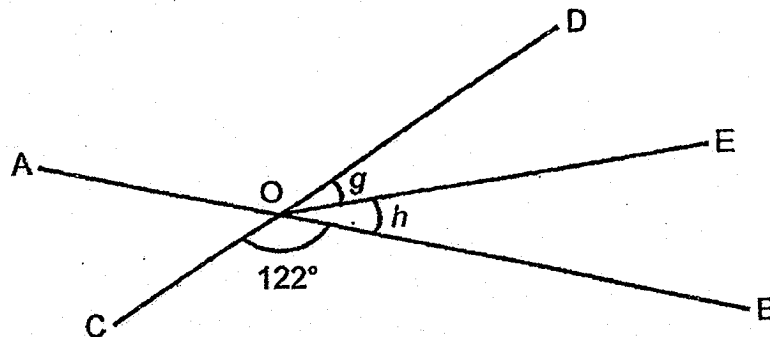
- (1) \$0.30
- (2) \$0.70
- (3) \$3.50
- (4) \$7.00

8  $20 : \square : 35 = 16 : 20 : 28$

What is the missing number in the box?

- (1) 24
- (2) 25
- (3) 26
- (4) 27

9 AB, CD and OE are straight lines.  $\angle g = \angle h$ . Find  $\angle g$ .



- (1)  $29^\circ$
- (2)  $30^\circ$
- (3)  $34^\circ$
- (4)  $58^\circ$

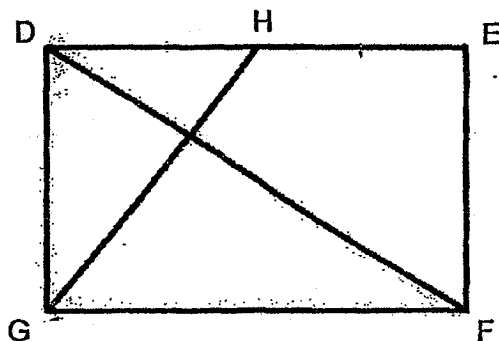
10 A number when rounded to the nearest hundred is 10 200.  
Which one of the following is a possible number?

- (1) 10 115
- (2) 10 148
- (3) 10 167
- (4) 10 251

- 11 A rectangular tank measuring 100 cm by 70 cm by 60 cm was  $\frac{4}{5}$  - filled with water. How much water was there in the tank?

- (1) 84 ℓ
- (2) 336 ℓ
- (3) 384 ℓ
- (4) 420 ℓ

- 12 In the figure below, DEFG is a rectangle and  $DH = HE$ . What is the ratio of the area of triangle DHG to the area of triangle DFG.



- (1) 1 : 2
- (2) 1 : 3
- (3) 2 : 1
- (4) 3 : 1

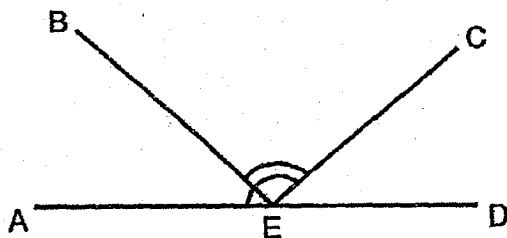
- 13 Mei Ling gave  $\frac{3}{8}$  of her salary to her mother and saved  $\frac{1}{5}$  of the remainder. What fraction of her salary did she save?

- (1)  $\frac{3}{40}$
- (2)  $\frac{1}{8}$
- (3)  $\frac{7}{40}$
- (4)  $\frac{17}{40}$

- 14 The length and breadth of a rectangle are  $\frac{4}{5}$  m and  $\frac{7}{10}$  m respectively. What is the area of the rectangle?

- (1)  $\frac{14}{25}$  m<sup>2</sup>
- (2)  $\frac{1}{10}$  m<sup>2</sup>
- (3)  $\frac{11}{15}$  m<sup>2</sup>
- (4)  $\frac{56}{100}$  m<sup>2</sup>

- 15 In the figure below, AD is a straight line.  $\angle AEC = 119^\circ$  and  $\angle BED = 155^\circ$ . Find  $\angle BEC$ .



- (1)  $36^\circ$
- (2)  $54^\circ$
- (3)  $94^\circ$
- (4)  $137^\circ$

# METHODIST GIRLS' SCHOOL (PRIMARY)

Founded in 1887



## MID YEAR EXAMINATION 2018 PRIMARY 5 MATHEMATICS

### PAPER 1 BOOKLET B

Total Time for Booklets A and B: 1 hour

#### 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.

Name: \_\_\_\_\_ (    )

Class: Primary 5. \_\_\_\_\_

Date: 26 October 2018

Parent's Signature: \_\_\_\_\_

|                      |              |
|----------------------|--------------|
| Paper 1<br>Booklet A | / 20         |
| Paper 1<br>Booklet B | / 25         |
| Paper 2              | / 55         |
| <b>TOTAL</b>         | <b>/ 100</b> |

This booklet consists of 8 printed pages including this 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. (5 marks)

Do not write  
in this space

16 Round 500 782 to the nearest thousand.

Ans: \_\_\_\_\_

17  $627.8 \div \square = 6.278$

What is the missing number in the box?

Ans: \_\_\_\_\_

18 Express 3 km 4 m in kilometres.

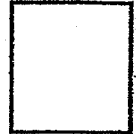
Ans: \_\_\_\_\_ km



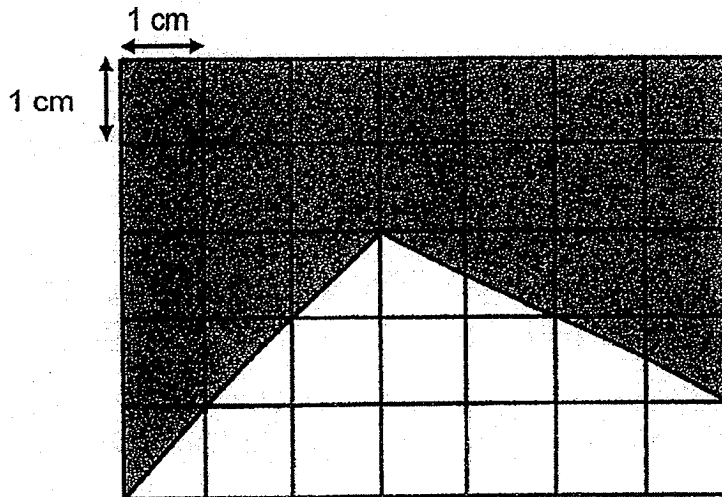
19 What is 25% of 300?

Do not write  
in this space

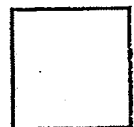
Ans: \_\_\_\_\_



20 Find the area of the unshaded region.



Ans: \_\_\_\_\_ cm<sup>2</sup>



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. (20 marks)

Do not write  
in this space

- 21 Rani had 210 fruits altogether.  $\frac{3}{7}$  of the fruits were apples and  $\frac{2}{5}$  of the remainder were oranges. How many oranges did she have?

Ans: \_\_\_\_\_

- 22 Meiling deposited \$20 000 in a fixed deposit account which pays an interest of 2% per year. How much money did she have in her account at the end of one year?

Ans: \$ \_\_\_\_\_

- 23** Ramad had 150 keychains. He gave away 40% of his keychains.  
How many keychains had he left?

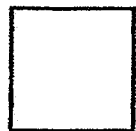
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in this space

Ans: \_\_\_\_\_



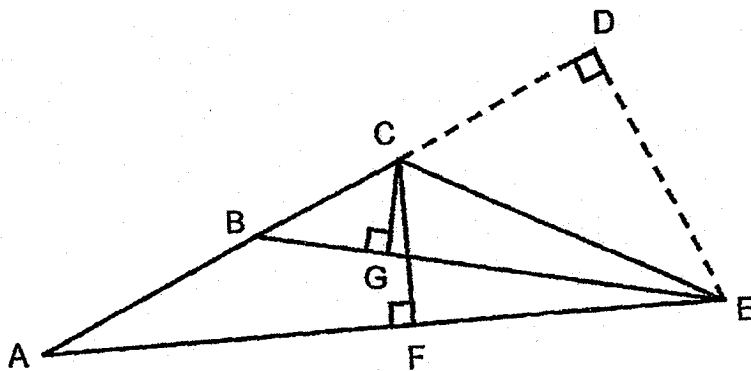
- 24** Tom, Bob and Ali have some stamps in the ratio of 3 : 6 : 2.  
They have a total of 187 stamps. How many stamps does Bob have?

Ans: \_\_\_\_\_



- 25 Study the diagram below and answer the following questions.

Do not write  
in this space



- (a) DE is the height of triangle ACE.  
Name the line that represents the base of the same triangle.
- (b) AE is the base of triangle ACE.  
Name the line that represents the height of the same triangle.

Ans: (a) Base: \_\_\_\_\_

(b) Height: \_\_\_\_\_

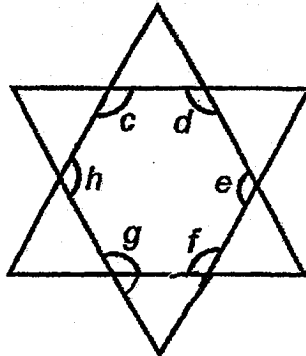


- 26 Mary's mother gave her \$76 in February. She spent all her money during recess from Monday to Friday. There were 4 weeks in that month. What was the average amount of money Mary spent on a weekday?

Ans: \$ \_\_\_\_\_



- 27 The figure below is formed by 2 equilateral triangles.  
Find  $\angle c + \angle d + \angle e + \angle f + \angle g + \angle h$ .



Do not write  
in this space

Ans: \_\_\_\_\_°

- 28 The table below shows the number of cars sold by Blackmore Company from January to May. The average number of cars sold per month was 30. How many cars were sold in the month of April?

| Month    | Number of Cars |
|----------|----------------|
| January  | 40             |
| February | 13             |
| March    | 25             |
| April    | ?              |
| May      | 38             |

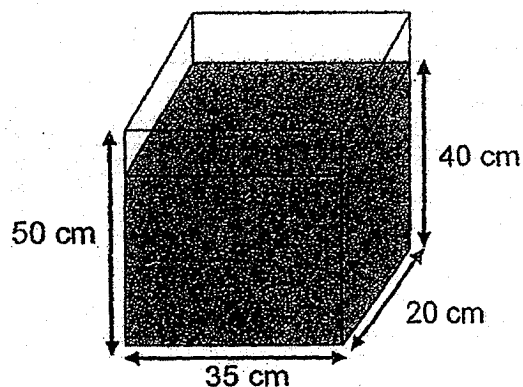
Ans: \_\_\_\_\_

- 29 Mrs Tang needs 2.05 kg of flour to bake a cake and 1.5 kg of flour to bake 12 cupcakes. How much flour would she need to bake 2 cakes and 6 cupcakes?

Do not write  
in this space

Ans: \_\_\_\_\_ kg

- 30 The box below is filled with sand to a height of 40 cm.



Each statement below is either true, false, or not possible to tell from the information given. For each statement, put a tick (✓) in the correct column.

| Statement                                                                                                                         | True | False | Not possible to tell |
|-----------------------------------------------------------------------------------------------------------------------------------|------|-------|----------------------|
| $\frac{1}{5}$ of the box is not filled with sand.                                                                                 |      |       |                      |
| If the length, breadth and height of the box is increased by 2 cm each, the volume of the box is increased by 8 cm <sup>3</sup> . |      |       |                      |

# METHODIST GIRLS' SCHOOL (PRIMARY)

Founded in 1887



## MID-YEAR EXAMINATION 2018 PRIMARY 5 MATHEMATICS

### PAPER 2

Duration: 1h 30 min

### INSTRUCTIONS TO CANDIDATES

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

Follow all instructions carefully.

Answer all questions.

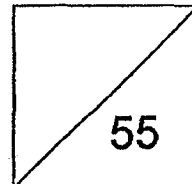
Write your answers in this booklet.

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

Name: \_\_\_\_\_ (    )

Class: Primary 5. \_\_\_\_\_

Date: 26 October 2018



Parent's Signature: \_\_\_\_\_

This booklet consists of 14 printed pages including this page.

Questions 1 to 5 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. (10 marks)

Do not write  
in this space

- 1 Rambutans were sold at \$3 per kilogram. Siti paid \$15.60 for her rambutans. Jenny paid \$28.20 for her rambutans.  
How many more kilograms of rambutans did Jenny buy than Siti?

Ans: \_\_\_\_\_ kg

- 2 Terry bought a car for \$153 000. He made a deposit of \$75 000. He then paid the remaining amount in equal monthly payments over 6 months.  
How much was the monthly payment?

Ans: \$ \_\_\_\_\_



- 3 There were 420 people in an auditorium. 126 of the people were children. What percentage of the people were adults?

Do not write  
in this space

Ans: \_\_\_\_\_ %

- 4 The ratio of the number of males to the number of females on a train was 7 : 3. After 12 females alighted from the train and another 12 males boarded the train, the ratio of the number of males to the number of females became 4 : 1. Find the number of males in the train at first.

Ans: \_\_\_\_\_

- 5 A Science competition had 84 winners.  $\frac{1}{2}$  of the winners won either bronze or gold medals.  $\frac{5}{6}$  of the winners won either gold or silver medals. How many of the winners won gold medals?

Do not write  
in this space

Ans: \_\_\_\_\_



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

Do not write  
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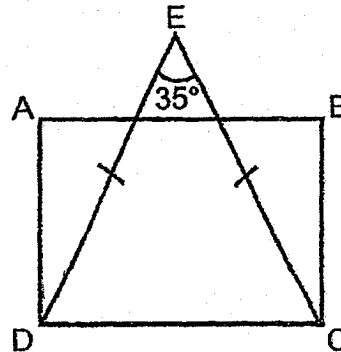
- 6 In 2001, Donny was 10 years old and his father was 52 years old.  
In which year was Donny's father 8 times as old as Donny?

Ans: \_\_\_\_\_ [3]

- 7 Penny read  $\frac{2}{5}$  of a story book in the morning. In the afternoon, she read another 100 pages. After that, she had  $\frac{1}{3}$  of the book left to read.  
How many pages were there in the book?

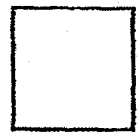
Ans: \_\_\_\_\_ [3]

- 8 In the diagram below, ABCD is a rectangle and ECD is an isosceles triangle.  $\angle DEC = 35^\circ$ . Find  $\angle EDA$ .

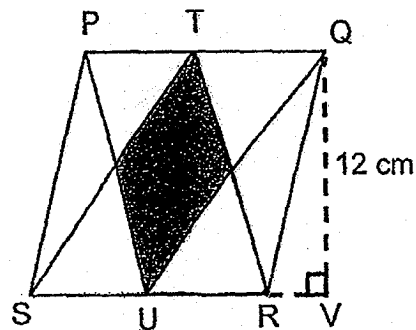


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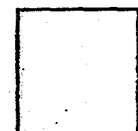
Ans: \_\_\_\_\_ [3]



- 9 PQRS is a rhombus of sides 13 cm. Points T and U are the mid-points of lines PQ and SR respectively. QV = 12 cm. Find the area of the shaded region.



Ans: \_\_\_\_\_ [3]



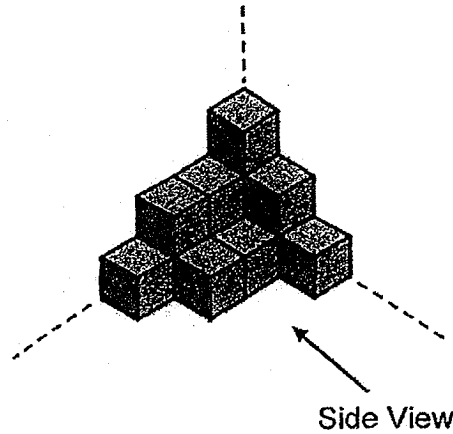
10 The solid below is made up of 1-cm cubes.

Do not write  
in this space

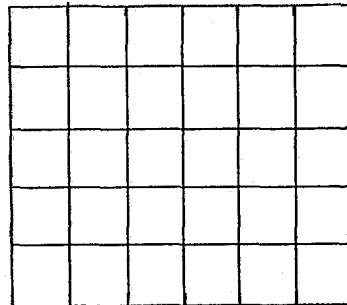
(a) Draw the side view of the solid in the grid provided.

(b) What is the volume of the solid below?

(c) How many more cubes are needed to build a cube with sides 4 cm?



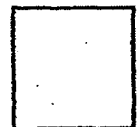
(a)



[1]

Ans: (b) \_\_\_\_\_ [1]

(c) \_\_\_\_\_ [1]



- 11 A box of 5280 sweets were shared among 400 children with no remainder. Each girl received 18 sweets and each boy received 10 sweets.

- (a) How many girls were there?  
(b) How many boys were there?

Do not write  
in this space

Ans: (a) \_\_\_\_\_ [3]

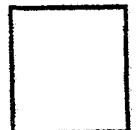
(b) \_\_\_\_\_ [1]



- 12 Mr Lim has 1350 bags. He sold  $\frac{1}{6}$  of the bags on Monday and 126 bags on Tuesday. What percentage of the bags did he sell in total?

Do not write  
in this space

Ans: \_\_\_\_\_ [4]



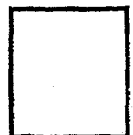
- 13 Mrs Tan placed an order for some necklaces and bracelets for a sum of \$63 700. Each bracelet cost \$2450 and each necklace cost twice as much as a bracelet. Mrs Tan ordered 7 necklaces more than bracelets.

Do not write  
in this space

- (a) How many bracelets did Mrs Tan order?  
(b) How many necklaces did Mrs Tan order?

Ans: (a) \_\_\_\_\_ [3]

(b) \_\_\_\_\_ [1]





- 14 An instructor had some counters to hand out to his participants.  
If he gave each participant 11 counters, he would have 5 extra counters.  
If he gave each participant 15 counters, he would be short of 175 counters.

Do not write  
in this space

- (a) How many participants were there?  
(b) How many counters did the instructor have?

Ans: (a) \_\_\_\_\_ [2]

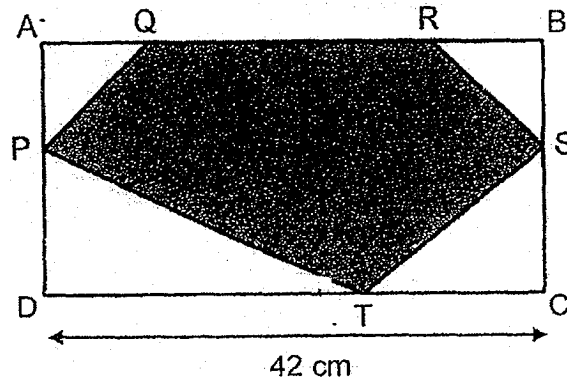
(b) \_\_\_\_\_ [2]



- 15 In the diagram below, ABCD is a rectangle. The length of the rectangle is twice its breadth. The ratio of the length of AP to the length of AD is 3 : 7.

Do not write  
in this space

- (a) Find the length of AD.  
(b) Find the area of the shaded region.



Ans: (a) \_\_\_\_\_ [1]

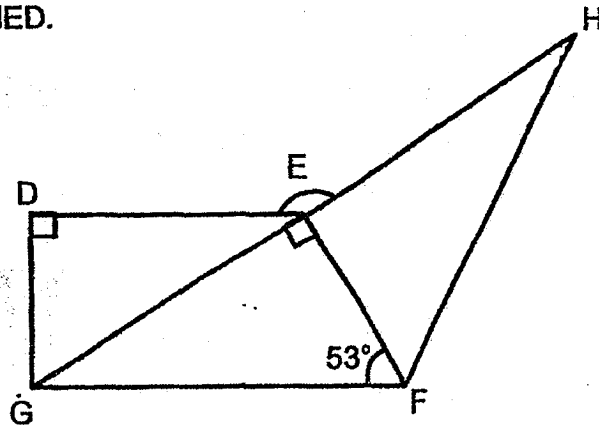
(b) \_\_\_\_\_ [4]

- 16 In the figure below, DEFG is a trapezium and FGH is a triangle.  
 $GF = FH$ .

Do not write  
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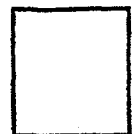
(a) Name two angles that are equal to  $\angle DEG$ .

(b) Find  $\angle HED$ .



Ans: (a) \_\_\_\_\_ & \_\_\_\_\_ [1]

(b) \_\_\_\_\_ [3]



- 17 A rectangular tank 80 cm by 55 cm by 75 cm contained some water.

Raja poured in another 112 l of water and the tank became  $\frac{7}{8}$  - full.

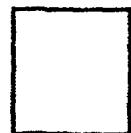
- (a) How much water was in the tank at first?  
(b) Mary then poured some more water into the tank and 1 500 ml of water overflowed. How much water did Mary pour in?

Give both answers in litres.

Do not write  
in this space

Ans: (a) \_\_\_\_\_ [3]

(b) \_\_\_\_\_ [2]



End of Paper 2

SCHOOL : MGS PRIMARY SCHOOL  
LEVEL : PRIMARY 5  
SUBJECT : MATH  
TERM : 2018 SA2

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**PAPER 1 BOOKLET A**

| Q 1 | Q2 | Q3 | Q4 | Q5 | Q6 | Q7 | Q8 | Q9 | Q10 |
|-----|----|----|----|----|----|----|----|----|-----|
| 1   | 3  | 4  | 3  | 4  | 1  | 3  | 2  | 1  | 3   |

| Q 11 | Q12 | Q13 | Q14 | Q15 |
|------|-----|-----|-----|-----|
| 2    | 1   | 2   | 1   | 3   |



# METHODIST GIRLS' SCHOOL (PRIMARY)

Founded in 1887



## END-OF-YEAR EXAMINATION 2018 PRIMARY 5 MATHEMATICS

### PAPER 1 BOOKLET B

Total Time for Booklets A and B: 1 hour

#### 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.

Name: \_\_\_\_\_ (   )

Class: Primary 5. \_\_\_\_\_

Date: 26 October 2018

Parent's Signature: \_\_\_\_\_

|                      |       |
|----------------------|-------|
| Paper 1<br>Booklet A | / 20  |
| Paper 1<br>Booklet B | / 25  |
| Paper 2              | / 55  |
| TOTAL                | / 100 |

This booklet consists of **8** printed pages including this 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. (5 marks)

Do not write in this space

16 Round 500 <sup>↶</sup>782 to the nearest thousand.

Ans: 501 000

☐

17  $627.8 \div \square = 6.278$

What is the missing number in the box?

Ans: 100

☐

5. | 18 Express 3 km 4 m in kilometres.

Ans: 3.004 km

☐

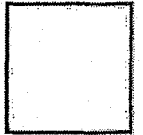


19 What is 25% of 300?

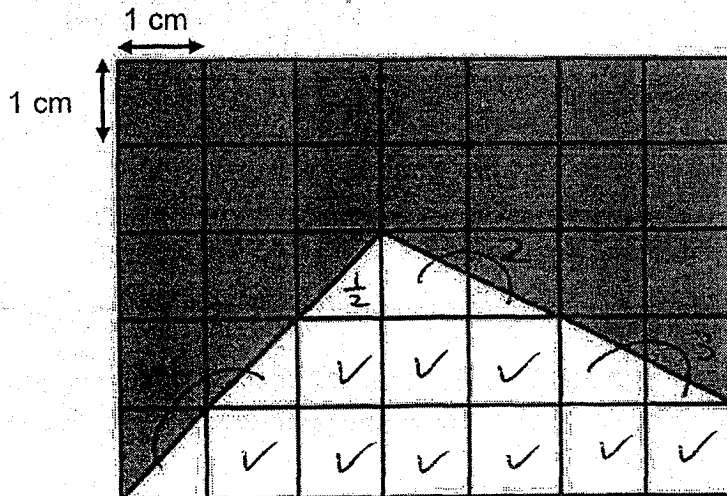
Do not write  
in this space

$$\frac{25}{100} \times 300 = 75$$

Ans: 75



20 Find the area of the **unshaded** region.



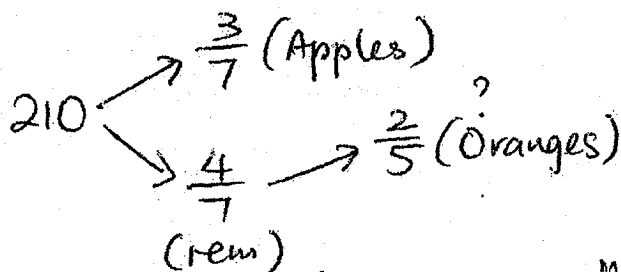
Ans: 12.5 cm<sup>2</sup>  
12½ cm<sup>2</sup>



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. (20 marks)

Do not write in this space

- 21 Rani had 210 fruits altogether.  $\frac{3}{7}$  of the fruits were apples and  $\frac{2}{5}$  of the remainder were oranges. How many oranges did she have?



$$\frac{2}{5} \times \frac{4}{7} \times \frac{30}{1} = 48$$

$$210 \div 7 = 30$$

$$30 \times 3 = 90 \text{ (A)}$$

$$210 - 90 = 120 \text{ (Remainder)}$$

$$\begin{aligned} &120 \div 5 = 24 \\ &24 \times 2 = \underline{48} \text{ (Oranges)} \end{aligned}$$

She had 48 oranges.

Ans: 48

- 22 Meiling deposited \$20 000 in a fixed deposit account which pays an interest of 2% per year. How much money did she have in her account at the end of one year?

$$\begin{aligned} &\frac{2}{100} \times 20\,000 \\ &= 400 \\ &20\,000 + 400 \\ &= \underline{20\,400} \\ &\text{She had } \underline{\$20\,400} \end{aligned}$$

$$\begin{aligned} &\text{OR} \\ &\frac{102}{100} \times \$20\,000 \\ &= \underline{\$20\,400} \end{aligned}$$

She had \$20 400.

Ans: \$ 20 400

- 23 Ramad had 150 keychains. He gave away 40% of his keychains. How many keychains had he left?

Do not write in this space

$$\begin{array}{l} \text{MI} \\ \frac{60}{100} \times 150 = 90 \\ \text{OR} \\ \frac{40}{100} \times 150 = 60 \\ \text{MI} \\ 150 - 60 = 90 \end{array}$$

He had 90 keychains left.

Ans: 90 AI



- 24 Tom, Bob and Ali have some stamps in the ratio of 3 : 6 : 2. They have a total of 187 stamps. How many stamps does Bob have?

$$\begin{array}{l} T : B : A \\ 3 : 6 : 2 \end{array} \quad \begin{array}{l} ? \\ \text{Total} \\ 11u \end{array}$$

$$11u = 187$$

$$1u = 187 \div 11$$

$$= 17$$

$$6u = 17 \times 6 \quad \text{--- MI}$$

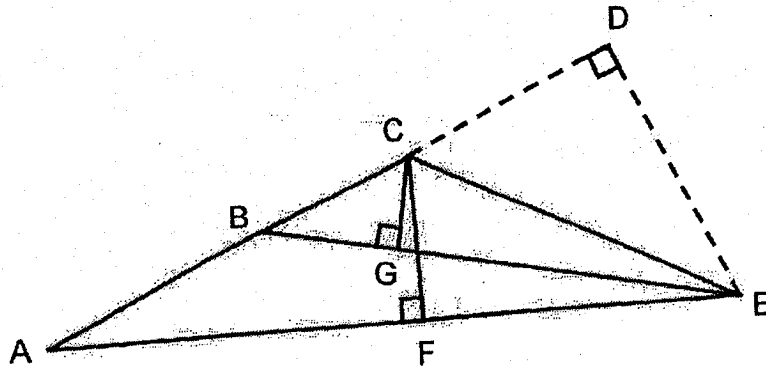
$$= \underline{\underline{102}}$$

Ans: 102 AI



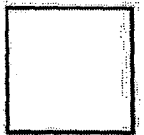
- 25 Study the diagram below and answer the following questions.

Do not write  
in this space



- (a) DE is the height of triangle ACE.  
Name the line that represents the base of the same triangle.
- (b) AE is the base of triangle ACE.  
Name the line that represents the height of the same triangle.

Ans: (a) Base: AC/CA  
(b) Height: CF/FC



- 26 Mary's mother gave her \$76 in February. She spent all her money during recess from Monday to Friday. There were 4 weeks in that month. What was the average amount of money Mary spent on a weekday?

$$\begin{aligned}
 &4 \times 5 = 20 \\
 &\text{mi} \\
 &\$76 \div 20 = \$76 \div 2 \div 10 \\
 &= \$38 \div 10 \\
 &= \underline{\underline{\$3.80}}
 \end{aligned}$$

The average was \$3.80.

Ans: \$ 3.80



- 5.1 27 The figure below is formed by 2 equilateral triangles.  
Find  $\angle c + \angle d + \angle e + \angle f + \angle g + \angle h$ .

Do not write  
in this space

OR

$180^\circ - 60^\circ = 120^\circ$   
 $\angle c = \angle d = \angle e = \angle f = \angle g = \angle h$   
 $= 120^\circ$   
 $\text{MI}$   
 $120^\circ \times 6 = \underline{720^\circ}$

$180^\circ - 60^\circ = 120^\circ$   
 $120^\circ + 120^\circ + 120^\circ + 120^\circ + 120^\circ + 120^\circ = \underline{720^\circ}$   
 $\text{MI}$

The sum is 720°

Ans: 720 <sup>AI</sup>

- 28 The table below shows the number of cars sold by Blackmore Company from January to May. The average number of cars sold per month was 30. How many cars were sold in the month of April?

| Month    | Number of Cars |
|----------|----------------|
| January  | 40             |
| February | 13             |
| March    | 25             |
| April    | ?              |
| May      | 38             |

$$\begin{aligned}
 &30 \times 5 = 150 \\
 &150 - (40 + 13 + 25 + 38) \text{ --- MI} \\
 &= 150 - 116 \\
 &= \underline{34}
 \end{aligned}$$

34 cars were sold.

Ans: 34 <sup>AI</sup>

5.129

Mrs Tang needs 2.05 kg of flour to bake a cake and 1.5 kg of flour to bake 12 cupcakes. How much flour would she need to bake 2 cakes and 6 cupcakes?

Do not write in this space

$$2.05 \times 2 = 4.1$$

$$1.5 \div 2 = 0.75$$

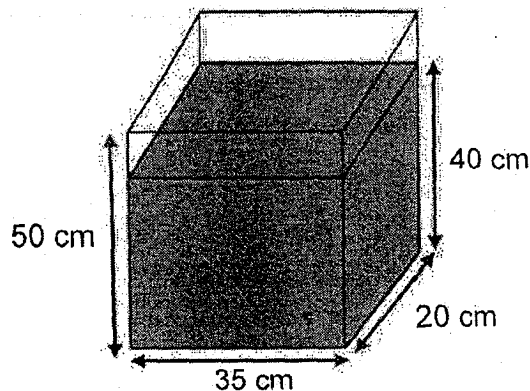
$$4.1 + 0.75 = 4.85$$

$$\begin{array}{r} 0.75 \\ 2 \overline{) 1.50} \\ \underline{-0} \downarrow \\ 15 \\ \underline{-14} \downarrow \\ 10 \\ \underline{-10} \\ 0 \end{array}$$

She would need 4.85 kg of flour.

Ans: 4.85 kg

30 The box below is filled with sand to a height of 40 cm.



Each statement below is either true, false, or not possible to tell from the information given. For each statement, put a tick (✓) in the correct column.

| Statement                                                                                                                         | True | False | Not possible to tell |
|-----------------------------------------------------------------------------------------------------------------------------------|------|-------|----------------------|
| $\frac{1}{5}$ of the box is not filled with sand.                                                                                 | ✓    |       |                      |
| If the length, breadth and height of the box is increased by 2 cm each, the volume of the box is increased by 8 cm <sup>3</sup> . |      | ✓     |                      |

# METHODIST GIRLS' SCHOOL (PRIMARY)

Founded in 1887



## END-OF-YEAR EXAMINATION 2018 PRIMARY 5 MATHEMATICS

### PAPER 2

Duration: 1h 30 min

### INSTRUCTIONS TO CANDIDATES

Do not turn over this page until you are told to do so.  
Follow all instructions carefully.

Answer all questions.

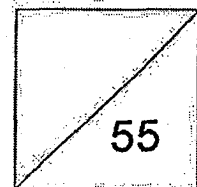
Write your answers in this booklet.

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

Name: \_\_\_\_\_ (    )

Class: Primary 5. \_\_\_\_\_

Date: 26 October 2018



Parent's Signature: \_\_\_\_\_

This booklet consists of 14 printed pages including this page.

Questions 1 to 5 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. (10 marks)

Do not write  
in this space

- 1 Rambutans were sold at \$3 per kilogram. Siti paid \$15.60 for her rambutans. Jenny paid \$28.20 for her rambutans.  
How many more kilograms of rambutans did Jenny buy than Siti?

$$15.6 \div 3 = 5.2$$

$$28.2 \div 3 = 9.4$$

$$9.4 - 5.2 = 4.2 \quad \text{--- MI, AI}$$

4.2 kg more

Ans: 4.2 kg



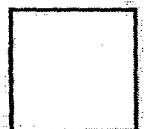
- 2 Terry bought a car for \$153 000. He made a deposit of \$75 000. He then paid the remaining amount in equal monthly payments over 6 months.  
How much was the monthly payment?

$$153\,000 - 75\,000 = 78\,000$$

$$78\,000 \div 6 = \underline{13\,000} \quad \text{--- MI, AI}$$

It was \$13 000.

Ans: \$ 13 000





- 3 There were 420 people in an auditorium. 126 of the people were children. What percentage of the people were adults?

Do not write  
in this space

$$400 - 126 = 294 \text{ (Adults)}$$

$$\frac{294}{400} \times 100\% = \underline{70\%} \quad \text{--- M1, A1}$$

70% of the people were adults.

Ans: 70 %

\* 4

- The ratio of the number of males to the number of females on a train was 7 : 3. After 12 females alighted from the train and another 12 males boarded the train, the ratio of the number of males to the number of females became 4 : 1. Find the number of males in the train at first.

Total  
Unchanged  
Concept

$$\begin{array}{rcl} ? & M : F & \\ & 7 : 3 & \\ +12 & \downarrow & \downarrow -12 \\ & 4_{x2} : 1_{x2} & \\ & = 8 : 2 & \end{array}$$

$$\begin{array}{|c|} \hline \text{Total} \\ \hline 10u \\ \hline 5u_{x2} \\ \hline = 10u \\ \hline \end{array}$$

\* Unchanged  
to total

$$8u - 7u = 1u$$

$$3u - 2u = 1u$$

$$1u = 12$$

$$7u = 12 \times 7 = 84$$

Ans: 84

There were 84 males at first.

- 5 A Science competition had 84 winners.  $\frac{1}{2}$  of the winners won either bronze or gold medals.  $\frac{5}{6}$  of the winners won either gold or silver medals. How many of the winners won gold medals?

Do not write  
in this space

Method 1:

$$\text{Fraction (Silver)} \rightarrow 1 - \frac{1}{2} = \frac{1}{2}$$

$$\text{Fraction (bronze)} \rightarrow 1 - \frac{5}{6} = \frac{1}{6}$$

$$\text{Fraction (gold)} \rightarrow \frac{1}{2} - \frac{1}{6} = \frac{1}{3}$$

$$\begin{aligned} \text{No. of gold} &\rightarrow \frac{1}{3} \times 84 \quad \text{--- M1} \\ &= 28 \quad \text{A1} \end{aligned}$$

Method 2:

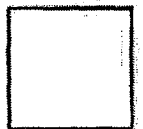
$$\text{Silver} \rightarrow 84 \div 2 = 42$$

$$\text{Gold or Silver} \rightarrow \frac{5}{6} \times 84 = 70$$

$$\text{Gold} \rightarrow 70 - 42 = 28 \quad \text{--- M1 A1}$$

28 won gold medals.

Ans: 28



For questions 6 to 17, show your working clearly and write your answers in the space 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) In 2001, Donny was 10 years old and his father was 52 years old.

Difference Unchanged Concept. In which year was Donny's father 8 times as old as Donny?

2001

$$52 - 10 = 42 \text{ (Age difference)}$$

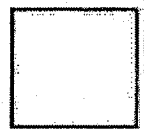
$$42 \div 7 = 6 \text{ (Donny's age then)} \text{ --- M1}$$

$$10 - 6 = \underline{4 \text{ years ago.}}$$

$$2001 - 4 = \underline{1997} \text{ --- M1, A1}$$

In 1997, Donny's father was 8 times as old as Donny.

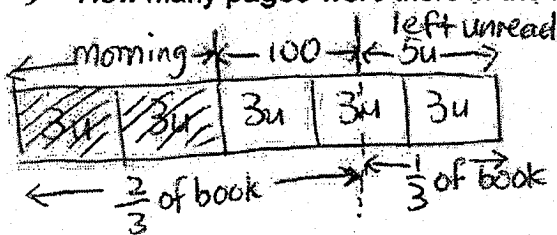
Ans: 1997 [3]



- (7) Penny read  $\frac{2}{5}$  of a story book in the morning. In the afternoon, she read another 100 pages. After that, she had  $\frac{1}{3}$  of the book left to read.

Model Drawing

How many pages were there in the book?



$$\frac{2}{5} \text{ of book} \rightarrow 2u + 100$$

$$\frac{1}{3} \text{ of book} \rightarrow 1u + 50$$

$$2u = 100 + 50 = 150 \text{ --- M1}$$

$$1u = 150 \div 2 = 75$$

$$5u = 75 \times 5 \text{ --- M1}$$

$$= \underline{375} \text{ A1 5}$$

$$\frac{2}{5} + \frac{1}{3} = \frac{6}{15} + \frac{5}{15} = \frac{11}{15}$$

$$1 - \frac{11}{15} = \frac{4}{15} \text{ --- M1}$$

$$4u = 100$$

$$1u = 100 \div 4 = 25$$

$$15u = 25 \times 15 = \underline{375} \text{ --- M1, A1}$$

Ans: 375 [3]



- 8 In the diagram below, ABCD is a rectangle and ECD is an isosceles triangle.  $\angle DEC = 35^\circ$ . Find  $\angle EDA$ .

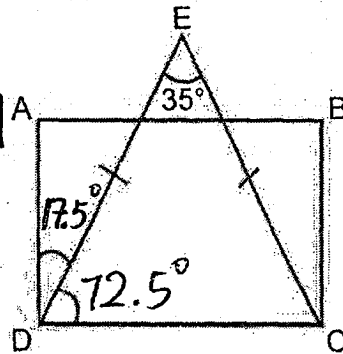
Do not write  
in this space

$$\angle EDC = (180^\circ - 35^\circ) \div 2 \quad \text{--- M1}$$

$$= 72.5^\circ$$

$$\angle EDA = 90^\circ - 72.5^\circ \quad \text{--- M1}$$

$$= 17.5^\circ \quad \text{A1}$$



The  $\angle EDA$  is  $17.5^\circ$ .

Ans:  $17.5^\circ$  [3]

- 9 PQRS is a rhombus of sides 13 cm. Points T and U are the mid-points of lines PQ and SR respectively. QV = 12 cm. Find the area of the shaded region.

Method 1:

$$\frac{1}{2} \times 6.5 \times 6 = 19.5 \quad \text{--- M1}$$

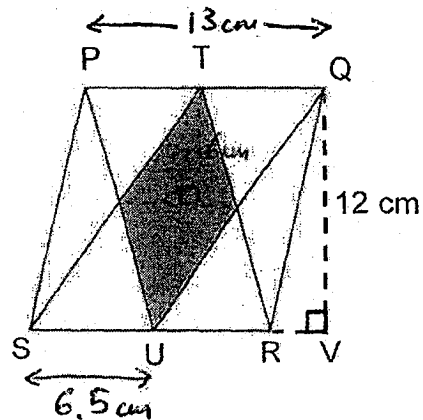
$$19.5 \times 2 = 39 \quad \text{--- M1A1}$$

Method 2:

$$\text{Area of } \triangle STR = \left( \frac{1}{2} \times 13 \times 12 \right) \text{ cm}^2 \quad \text{--- M1}$$

$$= 78 \text{ cm}^2$$

$$\begin{aligned} \text{Area of shaded part} &= 78 \text{ cm}^2 \div 2 \\ &= \underline{\underline{39 \text{ cm}^2}} \end{aligned}$$



The shaded area  
is  $39 \text{ cm}^2$ .

Ans:  $39 \text{ cm}^2$  [3]

Method 3:

$$13 \times 12 = 156$$

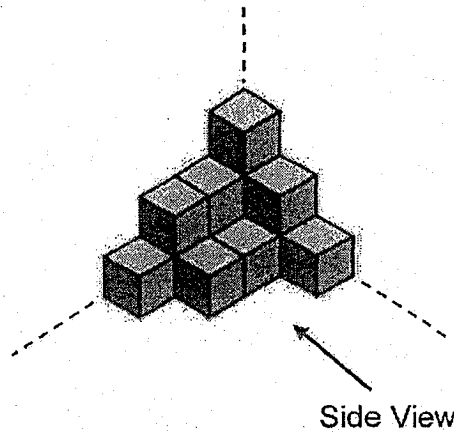
10 The solid below is made up of 1-cm cubes.

Do not write  
in this space

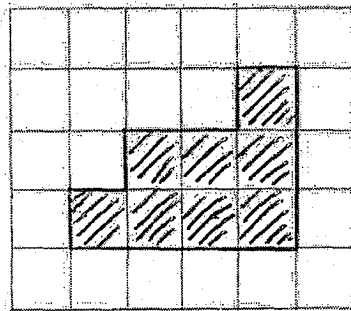
(a) Draw the side view of the solid in the grid provided.

(b) What is the volume of the solid below?

(c) How many more cubes are needed to build a cube with sides 4 cm?



(a)



A1

[1]

b) Top  $\rightarrow$  1  
2nd level  $\rightarrow$  4  
Bottom  $\rightarrow$  8

Total  $1 + 4 + 8 = 13$

The volume is 13 cm<sup>3</sup>. A1

c)  $4 \times 4 \times 4 = 64$

$64 - 13 = \underline{51}$  A1

51 more cubes.

Ans: (b) 13 cm<sup>3</sup> [1]

(c) 51 [1]



11

A box of 5280 sweets were shared among 400 children with no remainder. Each girl received 18 sweets and each boy received 10 sweets.

Use  
Assumption  
Method.

Do not write  
in this space

- (a) How many girls were there?  
(b) How many boys were there?

Assume all 400 children are boys.

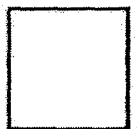
$$\begin{aligned} \text{a)} \quad & 400 \times 10 = 4000 \\ & 5280 - 4000 = 1280 \quad \text{--- M1} \\ & 1280 \div (18 - 10) = 1280 \div 8 \quad \text{--- M1} \\ & = 160 \text{ (girls)} \end{aligned}$$

There were 160 girls --- A1

$$\text{b)} \quad 400 - 160 = 240 \text{ (boys)}$$

There were 240 boys. --- A1

Ans: (a) 160 girls [3]  
(b) 240 boys [1]



- 12 Mr Lim has 1350 bags. He sold  $\frac{1}{6}$  of the bags on Monday and 126 bags on Tuesday. What percentage of the bags did he sell in total?

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in this space

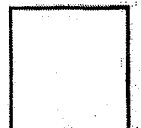
$$\frac{1}{6} \times 1350 = 225 \text{ ——— MI}$$

$$126 + 225 = 351 \text{ ——— MI}$$

$$\frac{351}{1350} \times 100\% = \underline{26\%} \text{ ——— MI A}$$

He sold 26% of the bags.

Ans: 26% [4]



- 13 Mrs Tan placed an order for some necklaces and bracelets for a sum of \$63 700. Each bracelet cost \$2450 and each necklace cost twice as much as a bracelet. Mrs Tan ordered 7 necklaces more than bracelets.

Do not write  
in this space

- (a) How many bracelets did Mrs Tan order?  
(b) How many necklaces did Mrs Tan order?

$$\begin{aligned}\text{Cost of necklace} &\rightarrow \$2450 \times 2 \\ &= \$4900\end{aligned}$$

$$\begin{aligned}\text{a) } 7 \text{ more necklaces} &\rightarrow \$4900 \times 7 \\ &= \$34300\end{aligned}$$

$$\$63700 - \$34300 = \$29400 \quad \text{--- MI}$$

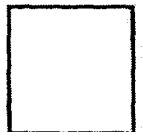
$$\$29400 \div (\overset{\text{(pair up)}}{\$2450 + \$4900}) = 4 \quad \text{--- MI, AI}$$

She ordered 4 bracelets.

$$\text{b) } 4 + 7 = 11 \quad \text{--- AI}$$

She ordered 11 necklaces.

Ans: (a) 4 [3]  
(b) 11 [1]





14

Excess and Shortage.

An instructor had some counters to hand out to his participants.

If he gave each participant 11 counters, he would have 5 extra counters. <sup>excess</sup>If he gave each participant 15 counters, he would be short of 175 shortage counters.Do not write  
in this space

(a) How many participants were there?

(b) How many counters did the instructor have?

$$\begin{aligned}
 a) \quad & 5 + 175 = 180 \\
 & 15 - 11 = 4 \\
 & 180 \div 4 = \underline{45} \text{ --- MI, AI}
 \end{aligned}$$

There were 45 participants.

$$b) \quad 45 \times 11 + 5 = \underline{500} \text{ --- MI, AI}$$

or

$$45 \times 15 - 175 = \underline{500} \text{ --- MI, AI}$$

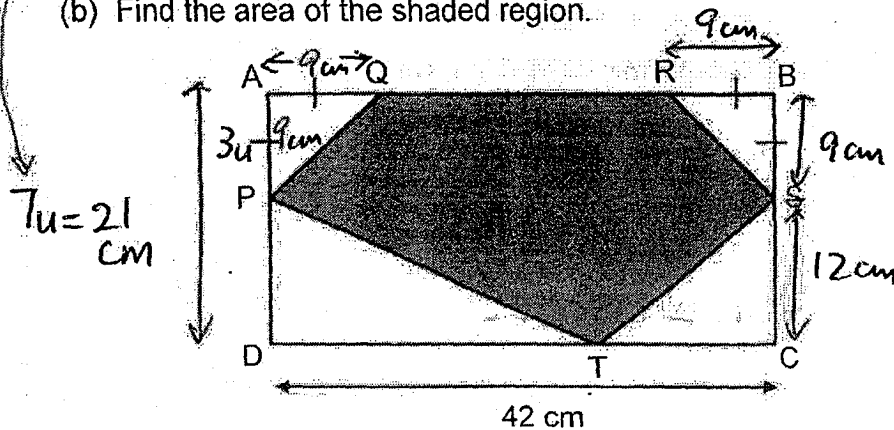
There were 500 counters.Ans: (a) 45 [2](b) 500 [2]

- 15 In the diagram below, ABCD is a rectangle. The length of the rectangle is twice its breadth. The ratio of the length of AP to the length of AD is

Do not write in this space

3:7.

- (a) Find the length of AD.  
(b) Find the area of the shaded region.



- a) Breadth  $\rightarrow 42 \div 2 = \underline{21}$  ——— AI  
Length AD is 21 cm.

- b) Area of rectangle  $\rightarrow 42 \times 21 = 882$

$$\begin{aligned} 7u &= 21 \\ 1u &= 21 \div 7 = 3 \\ 3u &= 3 \times 3 = 9 \end{aligned}$$

$$21 \text{ cm} - 9 \text{ cm} = 12 \text{ cm}$$

Area of 2 small  $\Delta$ s  $\rightarrow \left(\frac{1}{2} \times 9 \times 9\right) \times 2 = 81$

Area of Big unshaded  $\Delta$ s  $\rightarrow \frac{1}{2} \times 42 \times 12 = 252$

Area of shaded part  $\rightarrow 882 - 81 - 252 = \underline{549}$

The area of shaded region is 549 cm<sup>2</sup>.

Ans: (a) 21 cm [1]

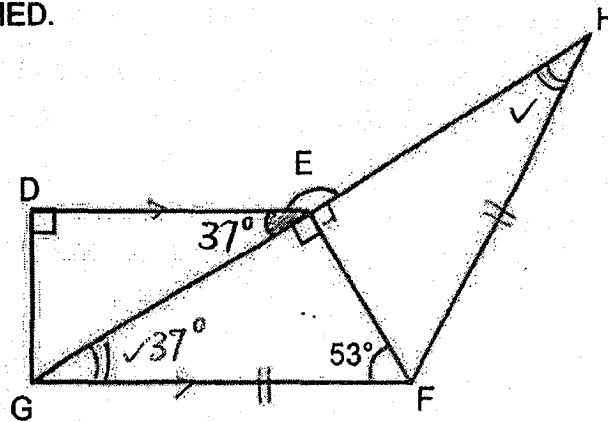
(b) 549 cm<sup>2</sup> [4]

- 16 In the figure below, DEFG is a trapezium and FGH is a triangle.  
GF = FH.

Do not write  
in this space

(a) Name two angles that are equal to  $\angle DEG$ .

(b) Find  $\angle HED$ .



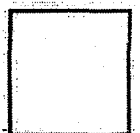
a)  $\angle EGF$  and  $\angle EHF$  ——— AI

b)  $\angle EGF = 180^\circ - 90^\circ - 53^\circ$  ——— MI  
 $= 37^\circ$

$\angle DEG = \angle EGF = 37^\circ$

$\angle HED = 360^\circ - 180^\circ - 37^\circ$  or  $180^\circ - 37^\circ$  ——— MI  
 $= 180^\circ - 37^\circ$   $= 143^\circ$  ——— AI  
 $= 143^\circ$  ——— AI

$\angle FGE$   $\angle FHE$   
Ans: (a)  $\angle EGF$  &  $\angle EHF$  [1]  
(b)  $143^\circ$  [3]



- 17 A rectangular tank 80 cm by 55 cm by 75 cm contained some water.  
Raja poured in another 112 l of water and the tank became  $\frac{7}{8}$  - full.

Do not write  
in this space

- (a) How much water was in the tank at first?  
(b) Mary then poured some more water into the tank and 1 500 ml of water overflowed. How much water did Mary pour in?  
Give both answers in litres.

$$\frac{7}{8} \times 80 \times 55 \times 75 = \frac{7}{8} \times 330\,000 \quad \text{--- M1}$$

$$= 288\,750$$

a)

$$288\,750 \text{ cm}^3 = 288.75 \text{ l}$$

$$288.75 - 112 = \underline{176.75} \quad \text{--- M1, A1}$$

There was 176.75 l at first

b) Method 1

$$330\,000 + 1500$$

$$= 331\,500$$

$$331.5 - 288.75 \quad \text{--- M1}$$

$$= \underline{42.75} \quad \text{--- A1}$$

Mary poured in 42.75 l.

Method 2

$$\frac{1}{8} \times 330\,000 = 41\,250$$

$$41\,250 + 1500 \quad \text{--- M1}$$

$$= 42\,750$$

$$42\,750 \text{ ml} = \underline{42.75 \text{ l}} \quad \text{--- A1}$$

Ans: (a) 176.75 l [3]

(b) 42.75 l [2]

