## METHODIST GIRLS' SCHOOL (PRIMARY)

Founded in 1887



### PRELIMINARY EXAMINATION 2022 PRIMARY 6 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 <u>NOT</u> allowed.

Name: \_\_\_\_ ( )

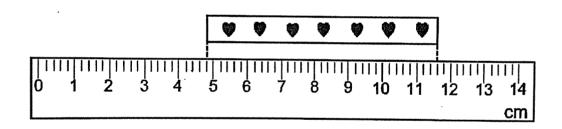
Class: Primary 6.\_\_\_\_

Date: 19 Aug 2022

This booklet consists of <u>8</u> printed pages including this page.

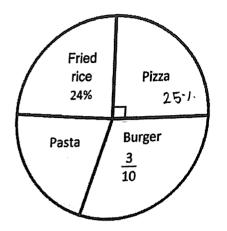
Questions 1 to 10 carry 1 mark each. Questions 11 to 15 carry 2 marks each. For each question, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet. (20 marks)

- 1 Which one of the following fractions is nearest to 1?
  - (1)  $\frac{2}{3}$ (2)  $\frac{4}{5}$ (3)  $1\frac{3}{4}$ (4)  $1\frac{3}{10}$
- 2 What is the length of the ribbon below?

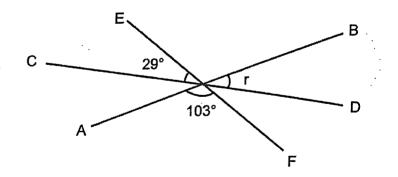


- (1) 6.4 cm
- (2) 6.8 cm
- (3) 6.9 cm
- (4) 11.6 cm

3 The pie chart below shows the favourite food of a group of children. What is the ratio of the number of children who like burger to the number of children who like pasta?



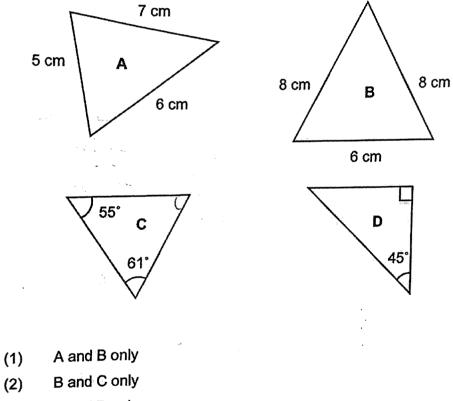
- (1) 1:7
- (2) 3:7
- (3) 6:5
- (4) 10:7
- 4 AB, CD and EF are straight lines. Find  $\angle r$ .



- (1) 29°
- (2) 48°
- (3) 61°
- (4) 77°

5 Express 1.8 as a percentage.

- (1) 0.018%
- (2) 0.18%
- (3) 1.8%
- (4) 180%
- 6 Which of the following are isosceles triangles?



- (3) B and D only
- (4) A, B and D only

7 The product of two numbers is 55. One of the numbers is 5. Find the average of the two numbers.

- (1) 8
- (2) 10
- (3) 11
- (4) 16

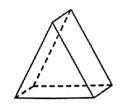
8 Adrian, Betty and Chandran shared 126 marbles in the ratio 2:4:3. How many marbles did Betty have?

- (1) 14
- (2) 28
- (3) 42
- (4) 56
- 9 Mei Ling baked 5*y* tarts. She gave her mother 25 of them and packed the rest equally into 3 boxes. How many tarts were there in each box?

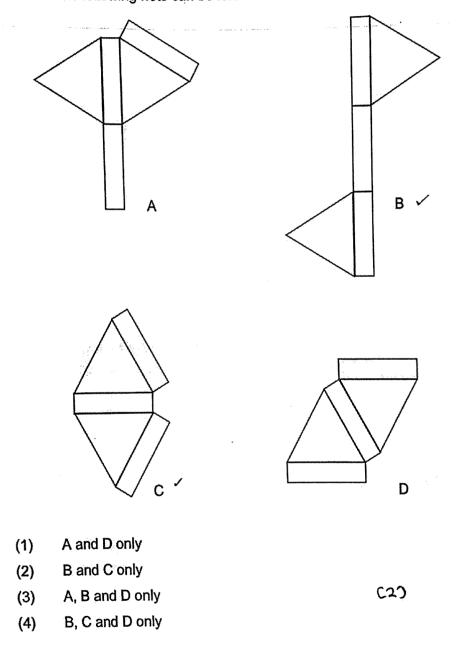
(1) 
$$\frac{5y}{3}$$
  
(2)  $\frac{5y+25}{3}$   
(3)  $\frac{5y}{3}-25$   
(4)  $\frac{5y-25}{3}$ 

10 The solid below is a prism.

•

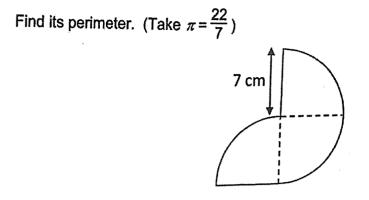


Which of the following nets can be folded to form the solid above?

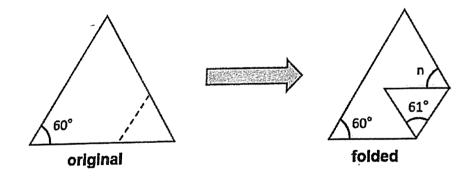


6

11 The figure below is made up of 3 identical quarter circles with radius 7 cm.



- (1) 47 cm
- (2) 75 cm
- (3) 115.5 cm
- (4) 129.5 cm
- 12 A piece of paper in the shape of an equilateral triangle is folded along the dotted line as shown. Find  $\angle n$ .



(1)	59°
-----	-----

- (2) 60°
- (3) 61°
- (4) 62°

- **13** Joanna and Elicia had an equal number of stickers at first. After Joanna gave away 30 of her stickers and Elicia bought another 12 stickers, Elicia had four times as many stickers as Joanna. How many stickers did each of them have at first?
  - (1) 36
  - (2) 42
  - (3) 44 (4) 56
- 14 Mrs Chan only had the following coins in her wallet.



She took three coins from her wallet and dropped them into a donation box. Which one of the following could not be the amount she donated?

- (1) \$0.35
- (2) \$0.75
- (3) \$1.15
- (4) \$1.65

(15) There were  $\frac{5}{7}$  as many red marbles as blue marbles in a jar. Dave took some blue marbles out of the jar and replaced them with the same number of red marbles. The number of red marbles became  $\frac{5}{9}$  of all the marbles in the jar. Which of the following is a possible number of blue marbles that were replaced?

- (1) 9
- (2) 10
- (3) 36
- (4) 63

(Go on to Booklet B)

# METHODIST GIRLS' SCHOOL (PRIMARY)

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## PRELIMINARY EXAMINATION 2022 PRIMARY 6 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 <u>NOT</u> allowed.

Name:

Class: Primary 6.\_\_\_\_

Date: 19 Aug 2022

Paper 1 Booklet B	/ 25

This booklet consists of <u>9</u> printed pages including this page.

Que prov stat	estions <b>16</b> to <b>20</b> carry 1 mark each. Write your answers in the spaces vided. For questions which require units, give your answers in the units ed. (5 marks)	Do not write in this space.
16	Write down all the common multiples of 7 and 5 that are smaller than 120.	
	Ans:	
17	Find the value of 2.7 ÷ 90.	
	Ans:	
18	Find the value of $\frac{2}{3} + \frac{4}{7}$ . Give your answer as a <u>mixed numb</u> er in the <u>simplest form</u> .	
	Ans:	

19	Find the value of $\frac{9w-7}{5}$ when $w = 8$ .	Do not write in this space.
	Ans:	
20   s	Megan took 45 minutes to travel from Point A to Point B at an average speed of 72 km/h. Find the distance between Point A and Point B.	
	Ans:km	

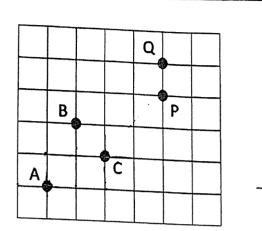
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Questions **21** to **30** carry 2 marks each. Show your working clearly and write your answers in the spaces provided. For questions which require units, give your answers in the units stated. (20 marks)

Do not write in this space.



21

Based on the square grid above, fill in the blanks with A, B, C, P or Q.

Ν

(a) Point \_\_\_\_\_ is south of point \_\_\_\_\_

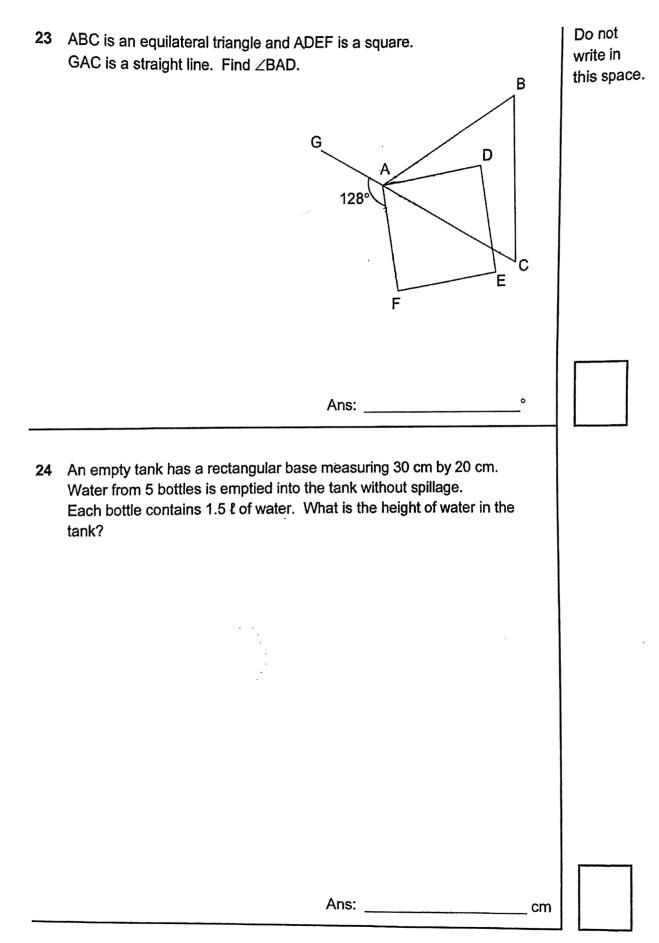
(b) Point \_\_\_\_\_ is north-east of point \_\_\_\_\_

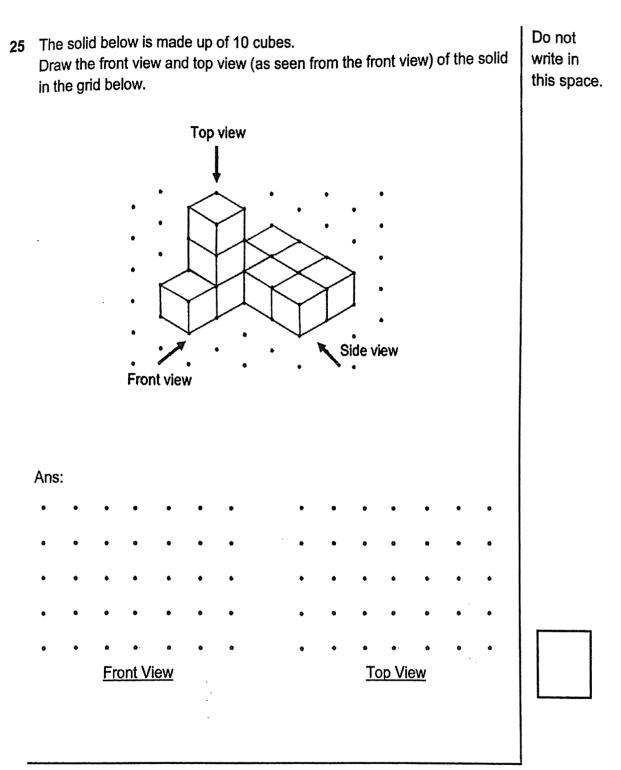
22 The table shows the charges for bicycle rental.

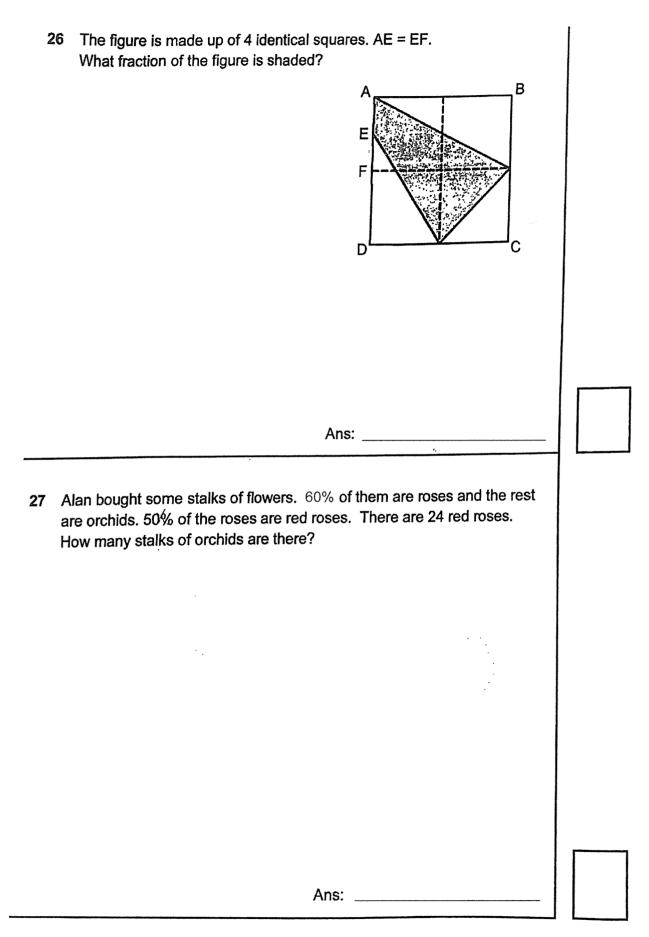
Bicycle for Rental	
For the first 1 hour	\$6.00
For every additional 30 minutes or part thereof	\$2.50

Jane rented a bicycle from 5.30 p.m. to 7.45 p.m. How much did she pay?

Ans: \$\_



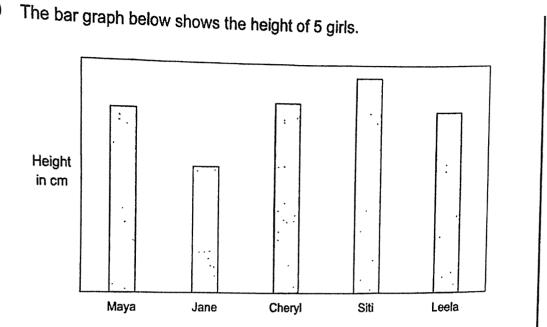




Kim baked 259 more cookies than Li Min. After each of them sold some Do not 28 write in cookies, Kim had  $\frac{2}{5}$  of her cookies left and Li Min had  $\frac{3}{4}$  of her cookies left. this space. Both Kim and Li Min had the same number of cookies left. How many cookies did Li Min bake at first? Ans: 29 A bookshop had 600 pens to sell over two weeks. In the first week, the ratio of the number of pens sold to the number of pens unsold was 1 : 2. In the second week, the ratio of the number of pens sold to the number of pens unsold was 5:3. How many pens did the bookshop sell in the second week? Ans:

9

Do not write in this space.



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

Statement	True	False	Not possible to tell
(a) Jane is 15 cm shorter than Maya.			
(b) The average height of the 5 girls is more than Jane's height but less than Siti's height.			
(c) The ratio of Jane's height to Siti's height is 1 : 2.			

# END OF PAPER

30

## METHODIST GIRLS' SCHOOL (PRIMARY)

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## PRELIMINARY EXAMINATION 2022 PRIMARY 6 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.

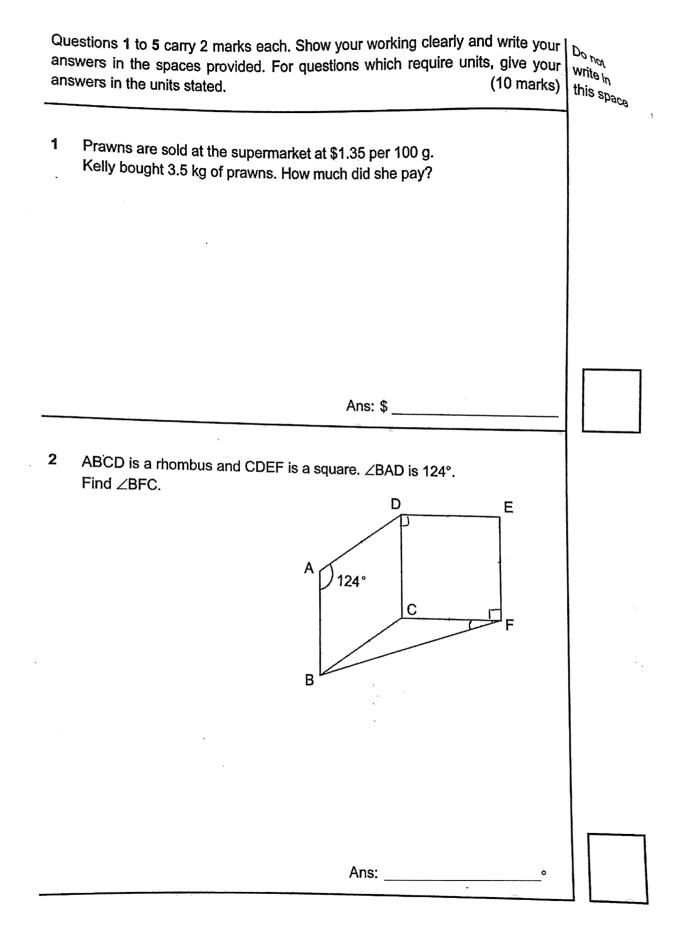
Answer all questions.

Write your answers in this booklet.

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

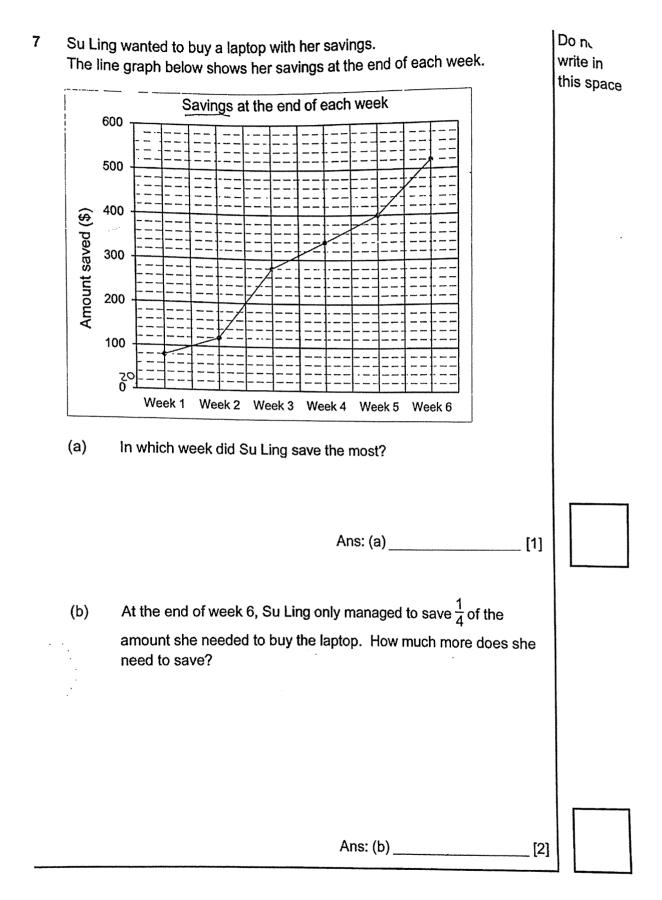
Name:	(	) Paper 1 Booklet A	/ 20
Class: Date :	Primary 6 19 August 2022	Paper 1 Booklet B	) 25
		Paper 2	/ 55
Parent's S	Signature:	TOTAL	/ 100

This booklet consists of <u>18</u> printed pages including this page.



Do not 5 The figure below shows part of a symmetric figure. write in this space • (a) Using the given dotted line as the line of symmetry, complete the symmetric figure by shading the correct square(s) below. [1] ((b) Jane used a different line of symmetry that required her to shade only two squares to complete a symmetric figure. Which two squares did Jane shade? Shade in the figure below to show your answer. [1]

For questions <b>6</b> to <b>17</b> , 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	A pen	costs \$ <i>p</i> . A notebook costs \$2 more than the pen.		
	(a)	What is the cost of 3 pens and 2 notebooks? Express your answer in terms of <i>p</i> in its simplest form.		
		Ans: (a)	[1]	
	(b)	Lee Lian paid \$22.50 for 3 pens and 2 notebooks. Find the cost of one notebook.		
	·.			
		Ans: (b)	[2]	

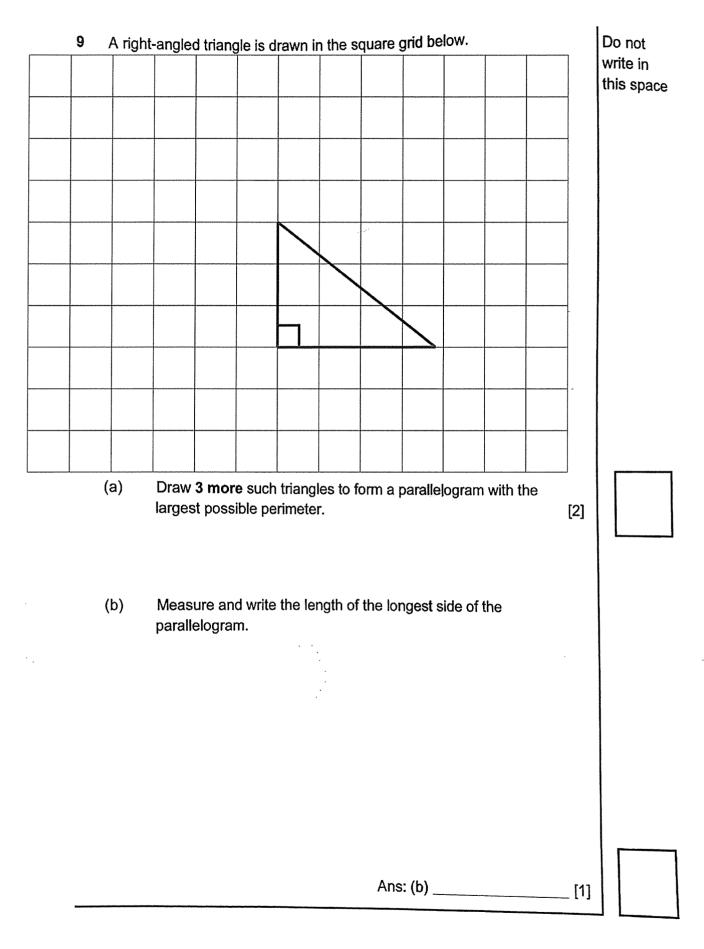


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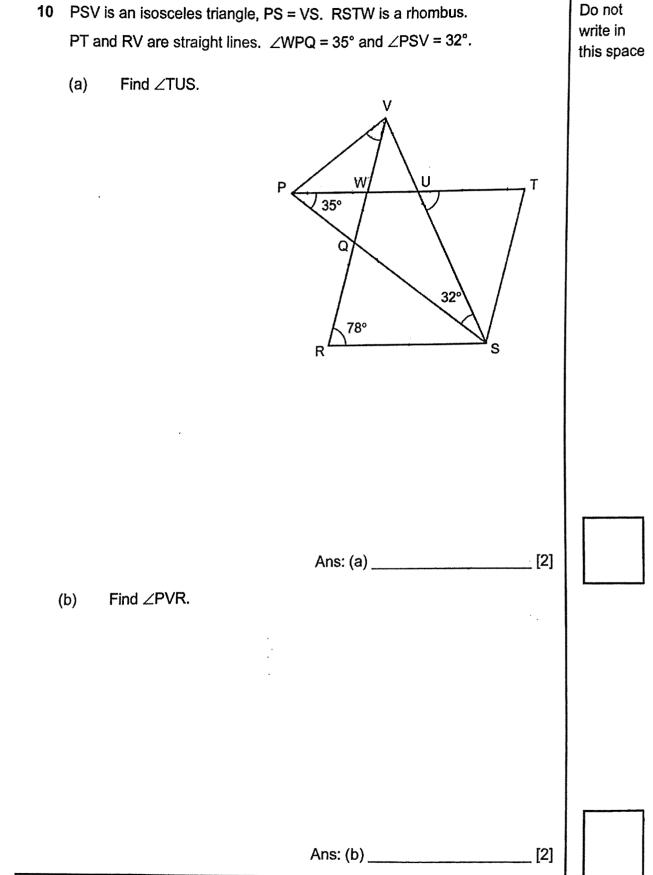
8 Alex and Ben started cycling at the same time from the start of a 6.12 km cycling path. Both did not change their speeds from the start to finish. Alex cycled at 340 m/min. When he reached the end of the path, Ben was 450 m behind him. Find Ben's speed in m/min.

Do not write in this space

Ans:	[3]
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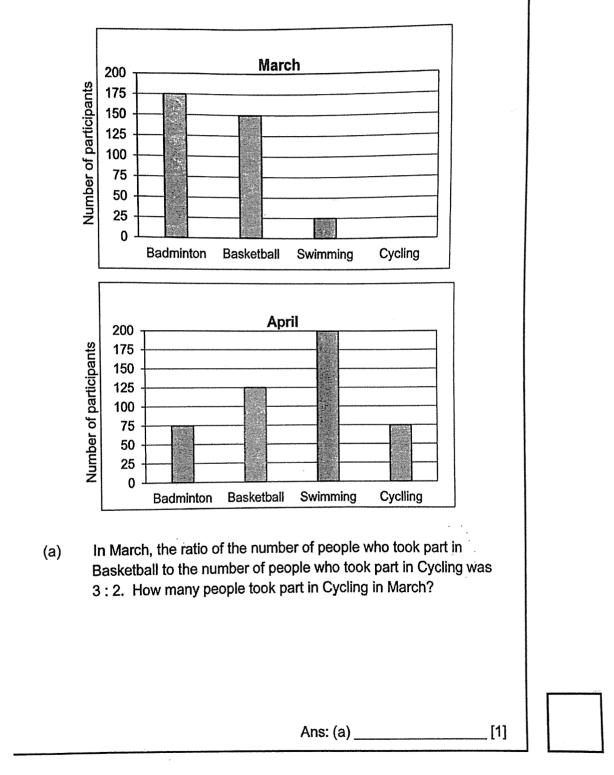


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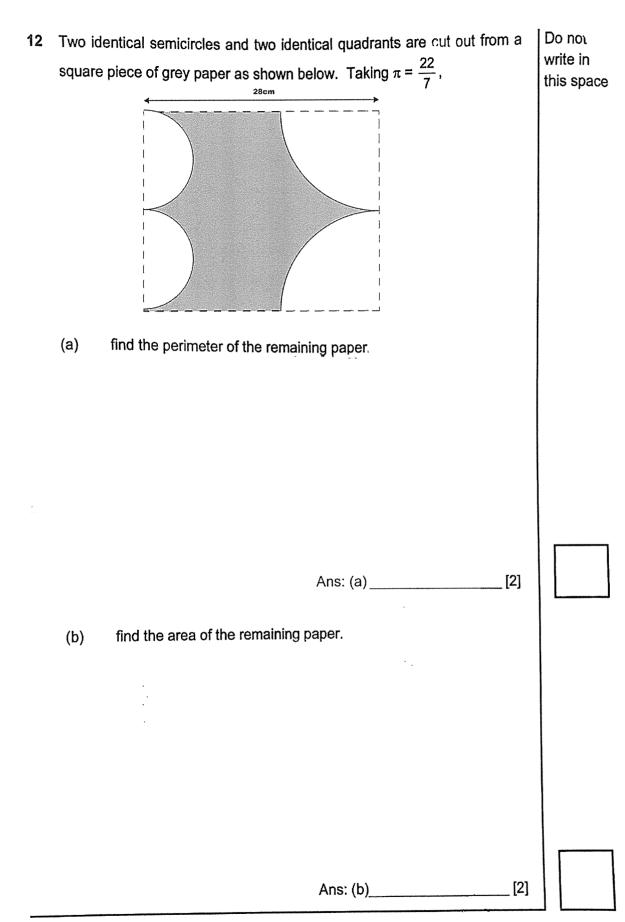
11The two bar graphs below show the number of members in a sports club<br/>who took part in 4 types of sports in March and April.DoThe bar for the number of members who participated in Cycling in March<br/>has not been drawn.Do

Do not write in this space



(b)	What was the percentage decrease in the number of people who took part in Badminton from March to April? Give your answer correct to 2 decimal places.	Do not write in this space
	Ans: (b)[2]	
(c)	An entrance fee was charged to those who took part in swimming. A total of \$528.75 was collected in March and April. How much was the entrance fee?	
		<b></b>
	Ans: (c) [1]	

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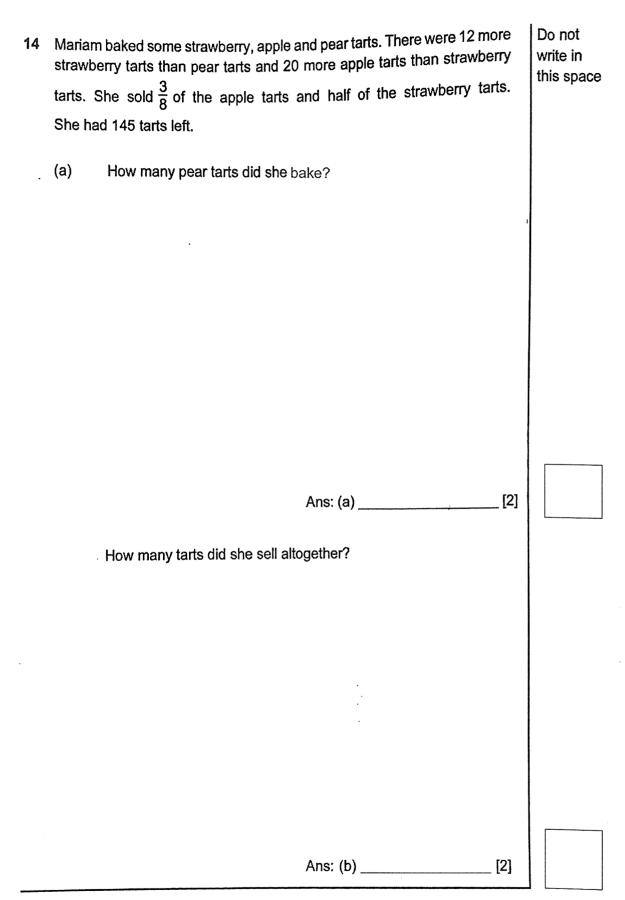
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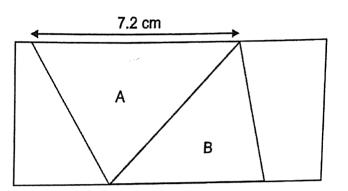
13 The average height of a group of children was 129.6 cm. One of the children's height was wrongly recorded as 162 cm when it should have been 126 cm. As a result, the average height calculated became 132.6 cm. How many children were there in the group?

Do not write in this space

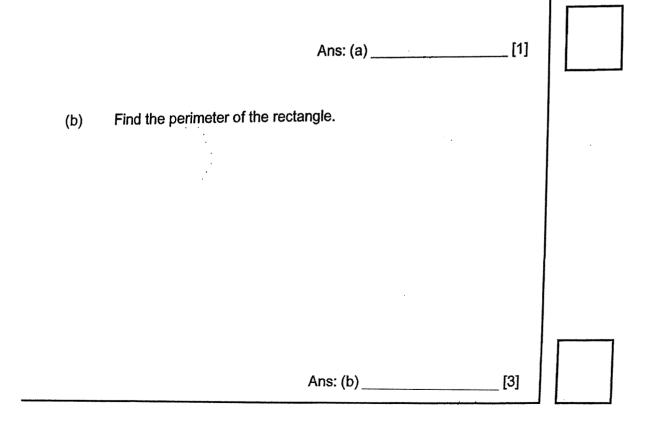
Ans:[3]		
Ans:[3]		
	Ans: [3]	



15 In the rectangle below, the area of triangle A is  $\frac{1}{3}$  the area of the rectangle. The area of triangle B is  $\frac{1}{4}$  the area of the rectangle. The area of triangle A is 5.85 cm<sup>2</sup> more than the area of triangle B.



(a) Find the area of the rectangle.



Do not

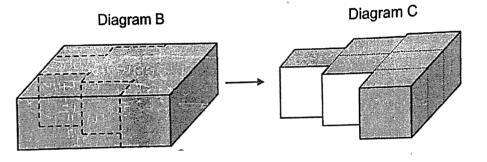
write in

this space

16 The wooden block as shown in Diagram A was dipped completely into a pail of paint.

Diagram A

Then, it was cut along the dotted lines as shown in Diagram B to form the solid as shown in Diagram C. The solid formed could be divided into 6 identical cubes.



The total unpainted area of the solid in Diagram C was 337.5 cm<sup>2</sup>.

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

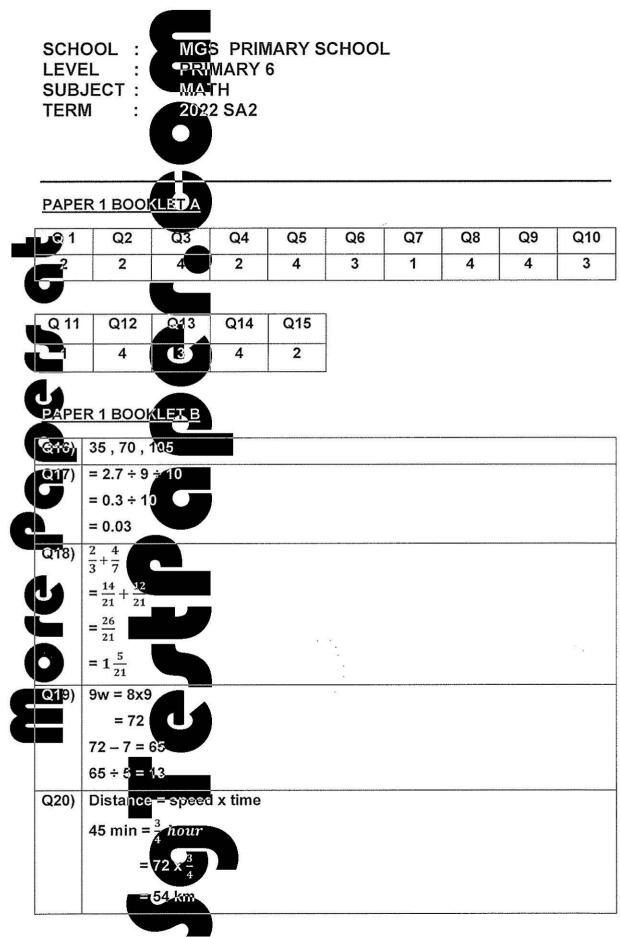
(a) Find the volume of the wooden block at first.

Do not write in this space

[3]

(b)	What percentage of the wooden block is the solid formed in Diagram C? Give your answer correct to 1 decimal place.		Do not write in this space
1 K <sub>0</sub>			
	Ans: (b)	[2]	
	•		

17		k of cards is numbered 1 to 50. Pamela draws 3 cards from it. um of the numbers on any of the 2 cards are 60, 28 and 58.	Do not write in
	(a)	Find the 3 numbers.	this space
		· ·	
		Ans: (a) [3]	
	(1-)	Che draws a fourth card and the average of the 4 numbers is 20	<b></b>
	(b)	She draws a fourth card and the average of the 4 numbers is 20. What is the number on the fourth card?	
	• •		
		Ann: /h) [0]	
		Ans: (b)[2]	



Q21)	T
	a) Point P is south of point Q
	b) Point P is north-east of point C
Q22)	Total time = 135 minute
Q22)	First hour (60 minute) = \$6.00
	Next 75 minute = $$2.50 \times 3$
	= \$7.50
	<i>ψ1.00</i>
	Total = \$7.50 + \$6.00
	= \$13.50
Q23)	∠ GAC = 180° - 128° = 52°
	$\angle$ FAD = 90° - 52° = 38°
	$\angle$ BAD = 60° - 38° = 22°
Q24)	1.5 x 5 = 7.5 litre
	= 7500 cm <sup>3</sup>
	$30 \times 20 = 600$
	7500 ÷ 600 = 12.5 cm
Q25)	
	Ans:
	WINNING CONTRACTOR
	Front View Top View
Q26)	$C - \frac{1}{2}x 4u = 2u$
	$B - \frac{1}{2} x 2u = 1u$
	$A - \frac{1}{2} \times 3u = 1.5u$
	Shaded = $\frac{7}{16}$
L	16

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Q27)	** rose : orchid
	60% : 40%
	24 24
	60% = 48
	$10\% = 48 \div 6 = 8$
	$40\% = 4 \times 8 = 32$

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Q28)	15u - 8u = 7u 7u = 259 1u = 259 ÷ 7 = 37 Li Min @ first = 8u = 37 x 8 = 296	8u			Kim Li Min $\frac{2}{5} \times 3 = \frac{6}{15}$ $\frac{3}{4} \times 2 = \frac{6}{3}$	53
Q29)	Method 1 First week Sold : Unsold : To 1 : 2 : 3 200 : 400 : 6	3			2 <sup>nd</sup> week Sold : Unsold : Total 5 : 3 : 8 250 : 150 : 400	
	8u = 400 1u = 400 ÷ 8 = 50 5u = 5x50 = 250					
Q30)	[ ·		Τ	Not		, ·
Q30)	Statement	True	False	Not possible to tell		
Q30)	Statement (a) Jane is 15 cm shorter than Maya.	True	False	possible		
Q30)	(a) Jane is 15 cm shorter than	True	False	possible		
Q30)	<ul> <li>(a) Jane is 15 cm shorter than Maya.</li> <li>(b) The average height of the 5 girls is more than Jane's height but less than Sitt's</li> </ul>	True	False	possible		

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PAPER 2

04	400~ > \$4.25
Q1)	100g> \$1.35
	1g> \$1.35 ÷ 100
	= \$0.0135
	3500g = \$0.0135 x 3500
	= \$47.25
Q2)	$< FCB = 360^{\circ} - 90^{\circ} - 124^{\circ}$
Q2)	$= 146^{\circ}$
	$ < BFC = (180^{\circ} - 146^{\circ}) \div 2 $
	= 17°
Q3)	<i>shop W</i> $$180 - $50 = $130$ (discounted Price)
	shop Y $100\% = $180$
	$25\% = $180 \div 4 = $45$
	180 - 45 = 135
	\$135 - \$130 = \$5
Q4)	Area of square = 24 x 24 = 576
	Area of rectangle = 576 ÷ 30 = 19.2 cm
Q5)	a)
,	~,
· .	
	b)

Q6)	a) Pen = \$p
	Notebook = $(p+2)$
	3  pen = \$3p
	2  notebooks = \$(2p+4)
	Total = \$(5p + 4)
	b) 3 pens + 2 notebooks = \$22.50
	1pen = \$p
	1 notebook = \$p+2
	5p = \$22.50 - 4 = \$18.50
	$1p = $18.50 \div 5 = $$3.70$
	1 notebook = \$3.70 + 2 + \$5.70
Q7)	a) Week 3
	b) $\frac{1}{4} = 520$
	Amount of money she still needs to save = $1 - \frac{1}{4} = \frac{3}{4}$
	3
	$\frac{3}{4} = 520 \ x \ 3 = \$1560$
Q8)	6.12km = 6120m
	Time taken for Alex to complete path
	$= D \div S = 6120 \div 340 = 18$
	Alex = 18  minutes  Ben = 450m  behind
	6120 - 450 = 5670 (distance Ben travelled after 18 minutes
	120 - 430 = 5670 (distance Ben travelled a) ter 18 minutes 18 minutes = 5670m
	Time = D + S = 5670 + 18 = 315m/minute
	$1 \text{ three } - D \neq 3 = 30/0 \neq 10 = 313 \text{ minimute}$

	Q9)	a)
		b)
	Q10)	a) $\langle SVP = (180^\circ - 32^\circ) \div 2 = 74^\circ$
		$\langle WPV = 74^{\circ} - 35^{\circ} = 39^{\circ}$
		$< TUS = < VUP = 180^{\circ} - 74^{\circ} - 39^{\circ} = 67^{\circ}$
		b) $< TWR = (360^\circ - 78^\circ - 78^\circ) \div 2 = 102^\circ$
		$^{\prime} < PWQ = 180^{\circ} - 102^{\circ} = 78^{\circ}$
		$< VWP = 180^{\circ} - 78^{\circ} = 102^{\circ}$
		$< PVR = 180^{\circ} - 102^{\circ} - 39^{\circ} = 39^{\circ}$
	Q11)	a) Basketball : cycling
	<b>~</b> ,	3 : 2
		· · 2
		3u = 150
		$1u = 150 \div 3$
		= 50
• •		$2u = 50 \times 2$
		= 100
-		
		percentagedecrease at 0.00/
		b) Percentage decrease = $\frac{percentage decrease}{original} \times 100\%$
		Badminton March = 175 April = 75
		175 - 75 = 100
		$\frac{100}{175} x  100\% = 57.14\%$
		c) People who took part in swimming
		= 25 + 200
		= 225
		225 people = \$528.75
		Entrance Fee Per person = \$528.75 ÷ 225
		= \$2.35
1	[	T

,

	4 22
Q12)	a) $\frac{1}{2} x \frac{22}{7} x 14 = 22$
	1 22
	$\frac{1}{4}x\frac{22}{7}x14x2 = 22$
	4 7 14 + 22 + 22 + 14 + 22 + 22 = 116 cm
	14 + 22 + 22 + 14 + 22 + 22 - 1100m
	b) and of whole names $= 20 \times 20 = 704$
	b) area of whole paper = $28 \times 28 = 784$
	area of 2 semicircles = $\frac{22}{7} x 7 x 7 = 154$
	1 22
	area of semicircle = $\frac{1}{2} x \frac{22}{7} x 7 x 7 = 77$
	$784 - (77x2) - (154 x 2) = 322 \ cm^2$
	$764 - (772) - (154 x 2) = 522 \text{ cm}^2$
Q13)	different in height = $162 - 126 = 36$
Q13)	
	different in average = 132.6 - 129.6 = 3
	no of children in the group = $36 \div 3 = 12$
Q14)	a) $4u + 6 + 5u + 20 + 8u = 145$
,	17u = 145 - 26
	= 119
	$1u = 119 \div 17$
	= 7
	b) 67
Q15)	a) $1u = 5.85 \text{ cm}^2$
	? = 12u
	$12u = 5.85 \times 12$
	$= 70.2 \text{ cm}^2$
	b) $8 \times 5.85 = 46.8$
	46.8 ÷ 7.2 = 6.5
	70.2 ÷ 6.5 = 10.8
	2 x (10.8 + 6.5) = 34.6 cm
Q16)	a) 6 faces = 337.5 cm <sup>2</sup>
	1 face = 337.5 ÷ 6 = 56.25 cm <sup>2</sup>
	Length = √56.25 = 7.5
	Vol of block = (3x7.5) x (3x7.5) x 7.5 = 3796.875 cm <sup>3</sup>
	b) $\frac{6}{9} \times 100\% = 66.7\%$
	, 9
017	a) 12 15 15
Q17)	a) 13, 15, 45 b) 12 + 15 + 45 = 72
[	b) 13 + 15 + 45 = 73

80 -	73 = 7		
l		 	

Pg8