

MARIS STELLA HIGH SCHOOL (PRIMARY) PRELIMINARY EXAMINATION PRIMARY 6 MATHEMATICS 16 AUGUST 2024 PAPER 1

(BOOKLET A)

15 questions 20 marks Total time for Booklets A and B: 1 hour

NAME:	()
CLASS: PRIMARY 6		·

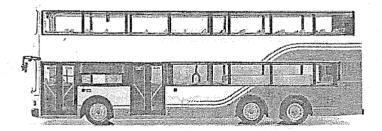
INSTRUCTIONS TO CANDIDATES

- 1. DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.
- 2. FOLLOW ALL INSTRUCTIONS CAREFULLY.
- 3. ANSWER ALL QUESTIONS.
- 4. 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) and shade your answer on the Optical Answer Sheet.

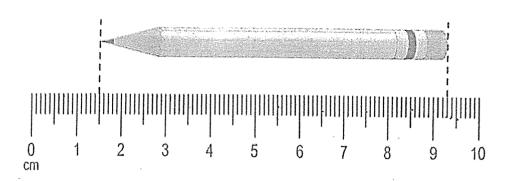
(20 marks)

- In which of the following numbers does the digit 5 appear in the ten thousands place?
 - (1) 567 897
 - (2) 987 654
 - (3) 1 234 567
 - (4) 7 654 321
- 2 Which of the following fractions is equal to $5\frac{6}{7}$?
 - (1) $\frac{30}{7}$
 - (2) $\frac{35}{7}$
 - (3) $\frac{37}{7}$
 - (4) $\frac{41}{7}$
- 3 What is the likely length of a public bus?
 - (1) 1.2 cm
 - (2) 12 m
 - (3) 120 m
 - (4) 1.2 km



- 4 Round 3.456 to 2 decimal places.
 - (1) 3.40
 - (2) 3.45
 - (3) 3.46
 - (4) 3.50

5 The diagram below (not drawn to scale) shows the length of a pencil.



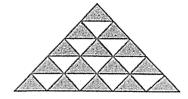
What is the length of the pencil?

- (1) 1.5 cm
- (2) 7.8 cm
- (3) 8.2 cm
- (4) 9.3 cm

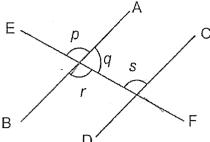
6 Arrange the following lengths from the shortest to the longest.

	10 m 50 cm	10 500 cm	10.05 m
	shortest		longest
(1)	10.05 m,	10 m 50 cm,	10 500 cm
(2)	10 m 50 cm,	10.05 m,	10 500 cm
(3)	10 500 cm,	10 m 50 cm,	10.05 m
(4)	10 500 cm,	10.05 m,	10 m 50 cm

- 7 The figure below is made up of identical triangles. What percentage of the figure is shaded?
 - (1) 10%
 - (2) 15%
 - (3) 40%
 - (4) 60%

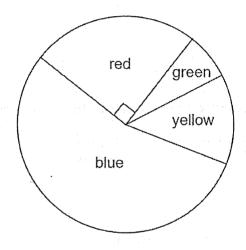


- In the diagram below. AB, CD and EF are straight lines. AB is parallel to CD. Which of the following is **false**?
 - (1) $\angle p + \angle q = 180^{\circ}$
 - (2) $\angle q = \angle r$
 - (3) $\angle p = \angle s$
 - $(4) \qquad \angle q + \angle s = 180^{\circ}$



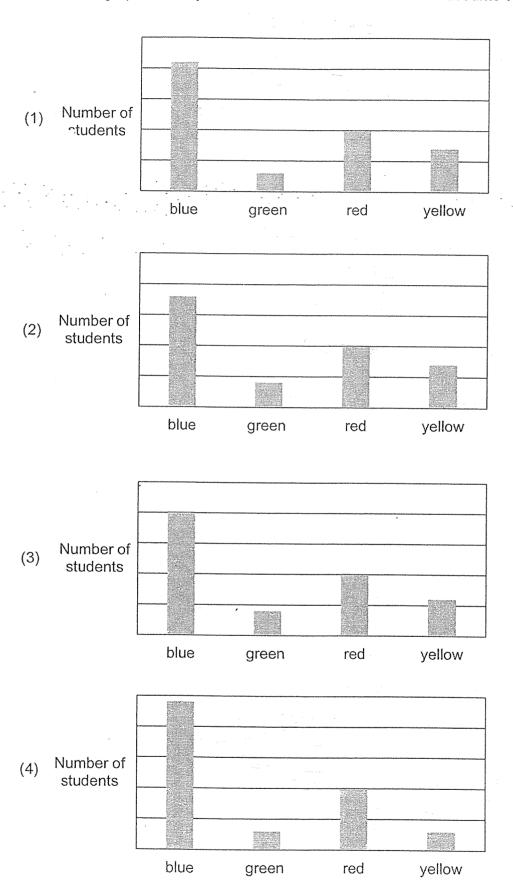
Study the pie chart below and answer questions 9 and 10.

The pie chart shows the choice of favourite colours of a group of students.

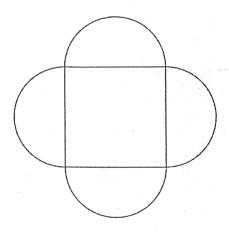


- **9** Which is the least favourite colour?
 - (1) red
 - (2) blue
 - (3) green
 - (4) yellow

10 Which bar graph correctly shows the choices of the students' favourite colour?



- 11 Which of the following expressions is the greatest?
 - (1) $4+3\times 2-1$
 - (2) $4+3\times(2-1)$
 - $(3) (4+3) \times 2 1$
 - $(4) (4 + 3 \times 2) 1$
- There were 60 blue chairs and 60 red chairs in the hall. More red chairs were added in the hall and the percentage of red chairs increased to 60%. How many red chairs were there in the hall in the end?
 - (1) 66
 - (2) 90
 - (3) 96
 - (4) 150
- The figure below is made up of a square and 4 identical semicircles. The perimeter of the figure is 16π cm.



What is the perimeter of the square?

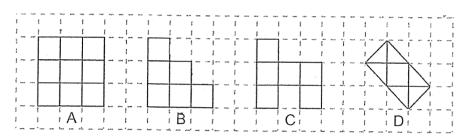
- (1) 8 cm
- (2) 16 cm
- (3) 32 cm
- (4) 64 cm

14 The pattern below is made up of the letters H, M, P and S.

Which letter is in the 123rd position?

- (1) H
- (2) M
- (3) P
- (4) S

15 The shapes below are drawn on square grids.



Which of the following statements is true?

- (1) A and B have the same perimeter.
- (2) A and B have the same area.
- (3) C and D have the same area.
- (4) C has a larger area than B.

END OF BOOKLET A GO TO BOOKLET B



MARIS STELLA HIGH SCHOOL (PRIMARY) PRELIMINARY EXAMINATION PRIMARY 6 MATHEMATICS 16 AUGUST 2024 PAPER 1 (BOOKLET B)

15 questions 25 marks

Total time for Booklets A and B: 1 hour

NAME :		()	
CLASS : PRIMA	ARY 6			
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- 1. DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.
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MARKS OBTAINED FOR				
PAPER 1 (BOOKLET A)	/ 20	Parent's Signature:		
PAPER 1 (BOOKLET B)	/ 25	-		
TOTAL -	/ 45	Date:		

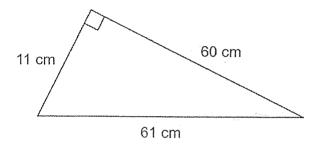
Questions 16 to 20 carry 1 mark each. Write your answers in the spaces provided. For questions which require units, give your answers in the units stated. (5 marks)

Do not write in this space.

Write five million, fifty thousand and fifty in numerals.

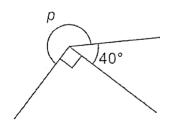
Ans:

17 Find the area of the right-angled triangle below.



Ans: _____ cm²

18 Find $\angle p$.



Ans: _____

19	A movie movie?	started	at 1155	and	ended	at 1	1428.	What	was the	duration	of the	Do not write in
												this space.
						ŕ		*				
				٠.	·	*	•	•		• • • • •		
									Ans:	h	min	
20	Calculate	e the ave	rage of	the f	ollowin	g nu	mber	s:				
			6	7	,	3		0	4			
									Ans: _	Harris Aller State of the State	uni n Mb. t n - a	
	-											

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 answer in the units stated.

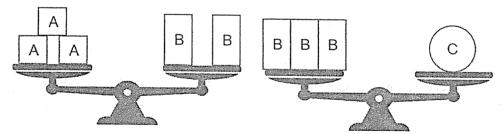
(20 marks)

Do not write in this space.

The product of 2 whole numbers is 60. The sum of these 2 numbers is 19. What is the difference between these 2 numbers?

Ans: _____

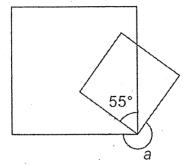
22 3 different types of masses, A, B and C are balanced as shown in the 2 balances below.



How many mass A are needed to balance 2 mass C?

Ans:

The diagram below shows 2 overlapping squares.



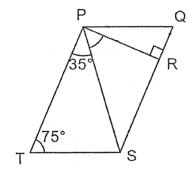
write in this space.

Do not

Find Za

Ans:	
7 (110)	-

24 PQST is a parallelogram as shown below. $\angle PTS = 75^{\circ}$ and $\angle TPS = 35^{\circ}$.

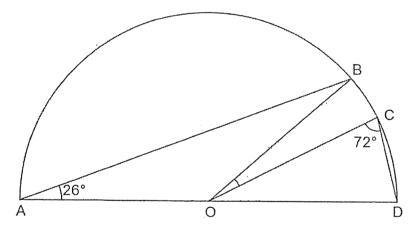


Find ∠SPR.

Ans: _____

Ans: \$	
---------	--

The figure below shows a semicircle with centre O. Triangles ABO and OCD are drawn inside the semicircle such that A, B, C and D are points on the semicircle. \angle OAB = 26° and \angle OCD = 72°.

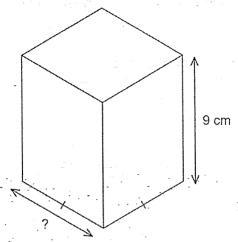


Find ∠BOC.

Ans: _____°

The cuboid below has a square base. The volume of the cuboid is 576 cm³.

Do not write in this space.



Find the side of the square base.

Ans:		cm
Alls.		OH

Alex can paint a room in 3 days. Bernard can paint the same room in 5 days. If they work together, how many days do they need to paint the room? Express your answer as a mixed number in the simplest form.

Ans: _____

29	Andrew was supposed to divide a number by 8. However, he made a mistake and divided the number by 6 instead. As a result, the answer he obtained was 4 more than the correct answer. What number was Andrew supposed to divide?	Do not write in this space.
	Ans:	
30	The figure below shows a square and a rectangle. Both shapes have the same perimeter. 6 cm	
	(x + 8) cm	
	What is the value of x?	
	Ans:	

End of Booklet B

13

SCORE



MARIS STELLA HIGH SCHOOL (PRIMARY) PRELIMINARY EXAMINATION PRIMARY 6 MATHEMATICS 16 AUGUST 2024 PAPER 2

17 questions 55 marks Time: 1 h 30 min

	* * .		
		<u>.</u>	
NAME:	(, n)	
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CLASS: PRIMARY 6			
		ST 107.46 12 - 807.46 13 - 807.16 20	

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- 6. YOU ARE ALLOWED TO USE A CALCULATOR.

M	ARKS OBTAINE	D 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 and write your answers in the space provided. For questions which require units, give your answers write in in the units stated. (10 marks) this

space

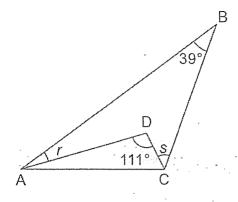
The diagram below shows some shapes.	
What is the ratio of the total number of shapes to the number of squares? Express your answer in the simplest form.	
Ans:	
15 $\frac{4}{5}$ kg of sugar was packed into bags of $\frac{5}{8}$ kg each.	
(a) What was the maximum number of bags of sugar?	
(a) What was the maximum humber of bags of sugar?	
	The section and section and section as the section
Ans: (a) (b) How much sugar was left unpacked?	
(b) How much sugar was left unpacked?	
	visto de servições de la maioria de la maior
Ans: (b) kg	- man-manuscrimental property
1 SCORE	
(Go on to the next page)	

3	The rhombus and rectangle shown below are made up of identical right-angle triangles. Perimeter = 42 cm Perimeter = 34 cm Perimeter = ? What is the perimeter of the right-angle triangle?	Do not write in this space
	Ans:cm	
4	The average height of a group of boys was 1.5 m. After 12 boys joined the group, the average height of all the boys increased to 1.65 m. How many boys were there in the group at first?	
	Ans:	4

2

5 In the figure below, ABC and ACD are triangles. ∠ABC = 39° and ∠ADC = 111°.

Do not write in this space



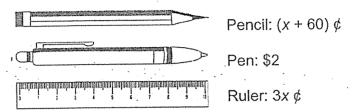
What is the sum of $\angle r$ and $\angle s$?

Ans: _____

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

Do not write in this space

6 The price of 3 items sold at a bookshop are shown below.



(a) Chester bought 1 pencil and 2 pens. Express the cost of the 3 items in terms of x.

(b) Joseph bought a pencil and a ruler. If x = 60, how much did he spend?

Ans: (b) _____[2]

7	Mr. Johnson drove at an average speed of 76 km/h from Town A to Town B which was 209 km away.					
	(a)	What was the duration of the jo	ourney? Expres	s your answe	er in hours.	in this space.
	· .		Ans: (a)	·	[1]	
	(b)	From Town B, he drove for and The distance between Town B average speed he drove from Texpress your answer in km /h.	and Town C wa	s 153.4 km. \		
			Ans: (b):	[2]	
					- <u> </u>	ا

not

The table below shows the number of students who borrowed books from the | Do not 8 school library in August.

write in this space.

Number of books borrowed	1	2	3	4	5 and above
Number of students	82	34	30	?	16

How many students borrowed less than 3 books?

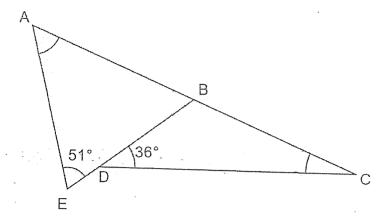
Ans:	(a)	[1]	
		-	-	

(b) The number of students who borrowed exactly 4 books was approximately 24% (rounded to the nearest percentage). What was the smallest possible number of students who borrowed exactly 4 books?

Ans: (b) _____

9 ABC is a straight line. ABE and BCD are triangles. ∠BDC = 36° and ∠BEA = 51°.

Do not write in this space.



(a) $\angle BCD = \frac{7}{9} \text{ of } \angle BDC. \text{ Find } \angle BCD.$

Ans: (a) _____[1]

(b) Find ∠BAE.

Ans: (b) _____[1]

(c) Circle the word(s) that describe ABE in the following statement. [1]

ABE (is / is not) an isosceles triangle.

The table below shows some information about the number of boys and girls in Schools A and B.

Do not write in this space,

	Boys	Girls	Total
School A	637		٠
School B			
Total		1118	2298

	•			•				
	•	-		4			1	
1.	Milhat	in H	an intal	number	of boys	in	noth	schools?
laı	vviiai	15 U	ic iviai	HOHIDGE	OI DOJO	** *	~~	00110010
· ~ ·								

ľ	1		ı
	ľ	[1	[1]

The number of girls in School B is $\frac{5}{8}$ of the number of girls in School A.

(b) How many girls are there in School A?

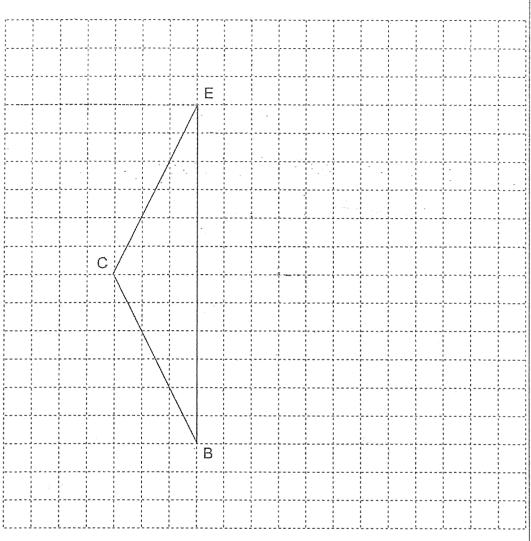
Ans: (b)	[1	IJ	l	

(c) What is the total number of boys and girls in School A?

Ans: (c) _____[1]

SCORE (Go on to the next page) 11 Triangle BCE, as shown below, forms part of a rhombus ABCE.

Do not write in this space.



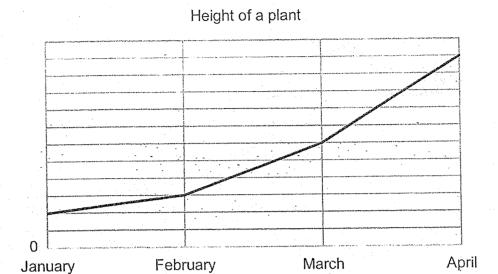
(a) Measure ∠ECB.

	İ	
L		1

- (b) On the square grid above, complete the drawing of rhombus ABCE and label point A. [1]
- (c) CDE is an isosceles triangle which does not overlap with rhombus ABCE such that ∠BED = 90°. On the square grid above, complete the drawing of CDE and label point D. [1]

12 The graph below shows the height of a plant from January to April.

Do not write in this space.



(a) In which one month interval was the percentage increase of the height the greatest?

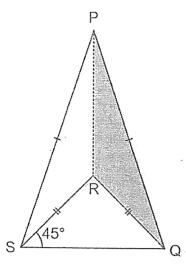
Ans: (a) ______to ____[2]

(b) The average height of the plant during this period was 16.5 cm. What was the height of the plant in March?

Ans: (b) _____[2]

PQS and QRS are isosceles triangles such that the height of Triangle PQS is thrice the height of Triangle QRS. The shaded area is 289 cm².

Do not write in this space.



(a) Find the area of Triangle PQS.

Ans: (a) ______[2

(b) Find the length of SQ.

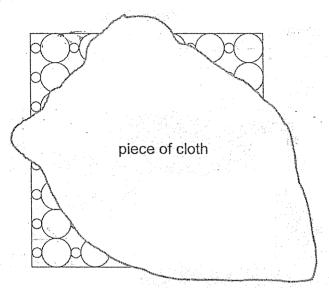
Ans: (b) _____[2]

	Mathematics competition, 5 points were awarded for points were deducted for an incorrect response. In a competition of 20 questions, Chester an wrongly. How many points did he get?	t	Do not write in his space.
	•		
	Ans: (a)	[2]	
(b)	In the competition that Dominic took part in, ther questions. He scored exactly 0 points. What is the questions he answered correctly?	The state of the s	
	Ans: (b)	[2]	

15:	in the	tio of the number of boys to the number of girls who visited a funfair war ratio of 10:7. The entrance fee for each person was \$12 and a total was collected from the children.	1 .
	(a)	How many boys were there?	
•			
-			
		Ans: (a)[2]
	numbe	at same day, the ratio of the number of males (boys and men) to the of females (girls and women) who visited the funfair was 8 : 5. The factor of the function women.	
	(b)	How many women were there?	
		n in the second	
<u>;</u>			[3]
		13 SCORI	=.

A large square tile of sides 48 cm is painted with circles in a fixed pattern shown below. Part of the tile is covered by a piece of cloth. The ratio of the radius of the small circle to the radius of the large circle is 1 : 3. The diameter of the small circle is 2 cm.

Do not write in this space.



(a) How many circles are printed on this square tile?

	1 12 2	1772	
Ane	: (a)	[3]	ľ
\sim	. 1a1	101	ł

(b) Find the percentage of the area of the square tile that is not covered with circles. Round your answer to the nearest percentage. (Take $\pi = 3.14$)

Do not write in this space.

Ans: (b) [2]

17	There were some 10ϕ , 20ϕ and 50ϕ coins in a box. There were 34 more 10ϕ coins than 20ϕ coins. The total value of all the 10ϕ coins and 20ϕ coins was \$13.30.			
	(a)	How many 10¢ coins were there in the box?		
•				
			The state of the s	
		Ans: (a)[2]		

 $\frac{2}{3}$ of the 50¢ coins were exchanged for \$1 coins which were then placed in the box. The total value of all the coins in the box did not change but the mass of all the coins in the box decreased by 172.8 g. The mass of each 50¢ coin is 6.5 g and the mass of each \$1 coin is 7.6 g.

Do not write in this space.

(b) What was the total number of 50ϕ and \$1 coins in the box after the exchange?

Ans: (b)	 [3]

 SCHOOL :

MARIS STELLA SCHOOL

LEVEL :

PRIMARY 6

SUBJECT:

MATH

TERM :

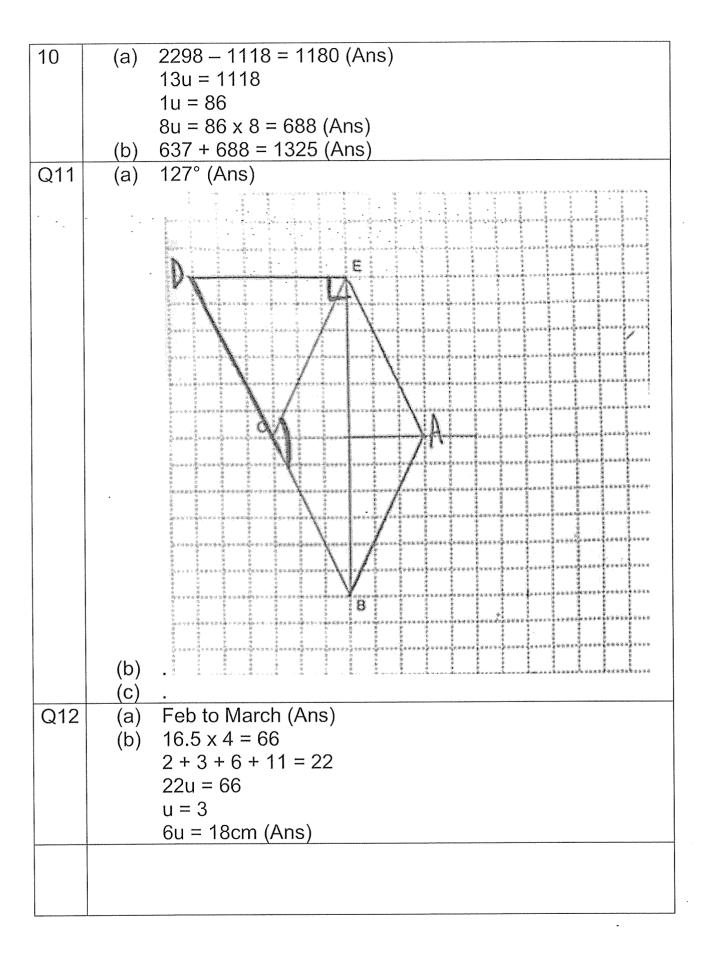
2024 PRELIM

•	
Q 1	Q2 Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10
4 Q11	Q12 Q13 Q14 Q15 3 1 1 4 2 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
3	2 3 1 1
Q16)	5050050
Q17)	330 cm2
Q18)	360 – 90 = 270
	270 – 40 = 230°
Q19)	2h 33 min
Q20)	4
Q21)	11
Q22)	9
Q23)	90 - 55 = 35 35 ÷ 35 = 70
	360 – 70 = 290
	290 – 55 = 2 <mark>35°</mark>
Q24)	180 - 90 = 90
	90 – 75 = 15 180 – 75 = 10 <u>5</u>
	105 – 35 = 70
	70 – 15 = 55°
Q25)	\$12
Q26	16°
Q27)	576 ÷ 9 = 64
	8 x 8 = 64 ANS: 8
Q28)	$1\frac{7^{\square}}{8^{\square}}$
Q29)	96

Q30) 2

Paper 2 Answers

Q1	12:4	= 3 : 1 (Ans)	
Q2		$15\frac{4}{5} \div \frac{5}{8} = 25\frac{7}{25}$ (Ans) = 25	
		$\frac{7}{5} \times \frac{5}{8} = \frac{7}{40} \text{ (Ans)}$	
Q3	42 ÷ 4		10
	34 ÷ 2	= 17	O_{J}
	10.5 +	17 = 27.5 (Ans)	
Q4	***This	question is voided by school due to error in qu	iestion***
Q5		111° = 69°	
		69° - 39° = 72° (Ans)	
Q6	(a)	(x + 60)¢ + \$2 + \$2	
		= x + 60c + 400c	
	/1- \	= x + 460¢ (Ans)	
	(a)	$(x + 60)\phi + (3x)\phi$	
		= (60+60)¢ + (3*60) ¢ = 120¢ + 180¢	
		= 300 ¢ = \$3 (Ans)	
Q7	(a)	$209 \div 76 = 2.75 \text{ hours (Ans)}$	
۵,	(b)	2h 36mins = $2\frac{36}{60} = 2\frac{3}{5} = 2.6$ hours	1
		Ave Speed = $153.4 \div 2.6 = 59$ km/h (Ans)	U
Q8	(a)	82 + 36 = 116 (Ans)	
QU	, ,	82 + 34 + 30 + 16 = 162	
		100% - 24% = 76%	
		76% = 162	
		$24\% = \frac{24}{76} \times 162 = 51.16$	
		, 6	
		- 51.16 + 162 = 213 *** $\frac{51}{213}$ x 100% = 23.9%	
		- 50 + 162 = 212 *** $\frac{50}{212}$ x 100% = 23.6%	4.0
		Therefore (Ans) 50	
Q9	(a)	$\frac{7}{9} \times 36^{\circ} = 28^{\circ} \text{ (Ans)}$	A
	(b)	∠DBC = 180° -36° - 28° = 116°	U
		∠ABE = 180° - 116° = 64°	
		∠BAE = 180° - 51° - 64° = 65° (Ans)	
	(c)	"Is Not" (Ans)	
		-	



Q13	(a)	Area of $\angle PQS = \frac{1}{2} \times B \times 3H$
		Area of $\angle QRS = \frac{1}{2} \times B \times H$
		$289 \times 3 = 867 \text{cm}^{2} \text{(Ans)}$
	(b)	$289 \times 4 = 1156$
Q14	(2)	$\sqrt{156} = 34 \text{ (Ans)}$ 17 x 5 = 85
Q 1-	(a)	$3 \times 3 = 9$
		85 - 9 = 76 (Ans)
	(b)	Multiple of 8 (Greatest and less than 100) = 96
		Total
	-	5 : 3 8 60 : 36 96
		(Ans) 36
Q15	(a)	Boy : Girls Total
		10:7
		17 x \$12 = \$204 4602 ÷ 204 = 22
		4692 ÷ 204 = 23 23 x 10 = 230 (Ans)
-	(b)	Male : Female = 8 : 5
		Ratio difference = 3
		54 ÷ 3 = 18
		Male : Female = 8 : 5 = 8 x18 : 5 x18
		= 144 : 90
		(Ans) 90 women
	MARKET THE TAXABLE PROPERTY OF THE PROPERTY OF	
		-

Q16	(a)	2 + 6 = 8 $48 \div 8 = 6$ $48 \div 6 = 8$ $6 \times 8 \times 2 = 96$
	(b)	$\pi \times 1 \times 1 \times 48$ = 3.14 × 48
		= 150.72 cm^2 $\pi \times 3 \times 3 \times 48$ = $3.14 \times 9 \times 48$
		= 1356.48 cm^2 Area of square = $48 \times 48 = 2304 \text{ cm}^2$
		2304 - 1356.48 - 150.72 = 796.80 cm ² $\frac{796.8}{2304} \times 100\% = 34.58\% = 35\% \text{ (Ans)}$
Q17	(a)	$34 \times 10 = 340 = 340 = 340$ \$13.30 - \$3.40 = \$9.90 $$9.90 \div $0.30 = 33$
	(b)	33 + 34 = 67 (Ans) 50ϕ coin = 6.5g $2 \times 50\phi$ coins = 6.5g x 2 = 13g \$1 coin = 7.6g
		weight difference between \$1 coin and $50¢$ coin $13g - 7.6g = 5.4g$ $172.8g \div 5.4g = 32$
		32 sets of (2 x 50¢ coins) was changed to \$1 coin $\frac{2}{3}$ of the initial 50¢ coins = 32 x 2 = 64pcs
		64pcs of 50¢ coins changed to 32pcs of \$1 coins $\frac{1}{3}$ of the balance 50¢ coins = 32pcs of 50¢ coins
		32 pcs of 50¢ coins and 32 pcs of \$1 coins Ans : Total 64 coins