SA2

PSLE Index No. | | | | | | – | |

MARIS STELLA HIGH SCHOOL (PRIMARY)
PRELIMINARY EXAMINATION
PRIMARY 6 MATHEMATICS
20 AUGUST 2021
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. Write your Index No. in the boxes at the top right hand corner.
2. Do not turn over this page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Shade your answers in the Optical Answer Sheet (OAS) provided.
6. The use of calculators is **NOT** allowed.

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)

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1. What is the value of the digit '1' in 4 215 087?

   (1) 10
   (2) 1000
   (3) 10 000
   (4) 100 000

2. 8 ones, 6 tenths and 3 thousandths is _____.

   (1) 0.863
   (2) 8.063
   (3) 8.603
   (4) 8.630

3. Arrange the following fractions from the smallest to the greatest.

   $\frac{2}{5}$ $\frac{3}{4}$ $\frac{3}{8}$

   smallest greatest

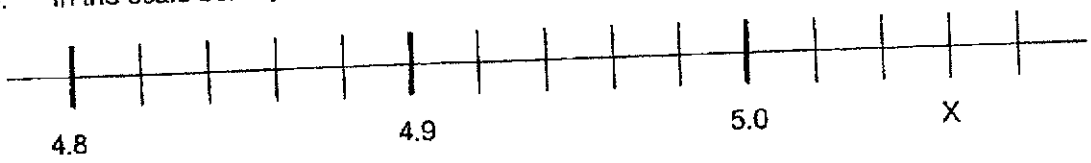
   (1) $\frac{3}{8}$, $\frac{2}{5}$, $\frac{3}{4}$

   (2) $\frac{2}{5}$, $\frac{3}{8}$, $\frac{3}{4}$

   (3) $\frac{2}{5}$, $\frac{3}{4}$, $\frac{3}{8}$

   (4) $\frac{3}{4}$, $\frac{2}{5}$, $\frac{3}{8}$

4. In the scale below, what is the value of X?

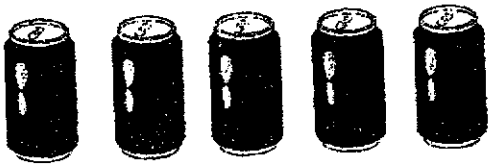


(1) 5.3
(2) 5.6
(3) 5.03
(4) 5.06

5. Express 700 g in kilograms.

(1) 0.007 kg
(2) 0.07 kg
(3) 0.7 kg
(4) 7 kg

6. Which of the following could be the total volume of liquid in 5 cans of drinks?



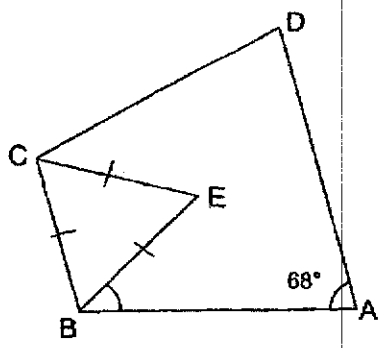
(1) 1.65 ℓ
(2) 16.5 ml
(3) 165 ml
(4) 1650 ℓ

7. 6.05 = ☐ ÷ 1000

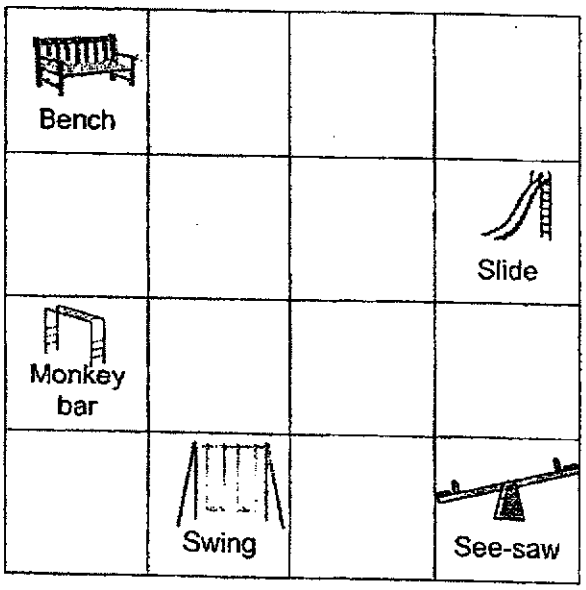
(1) 6.05
(2) 60.5
(3) 605
(4) 6050

8. In the figure, BCE is an equilateral triangle. ABCD is a trapezium with AD parallel to BC. $\angle DAB = 68°$. Find $\angle ABE$.

(1) 52°
(2) 56°
(3) 60°
(4) 68°



9. The grid below shows the plan of a playground. In what direction is the slide from the swing?

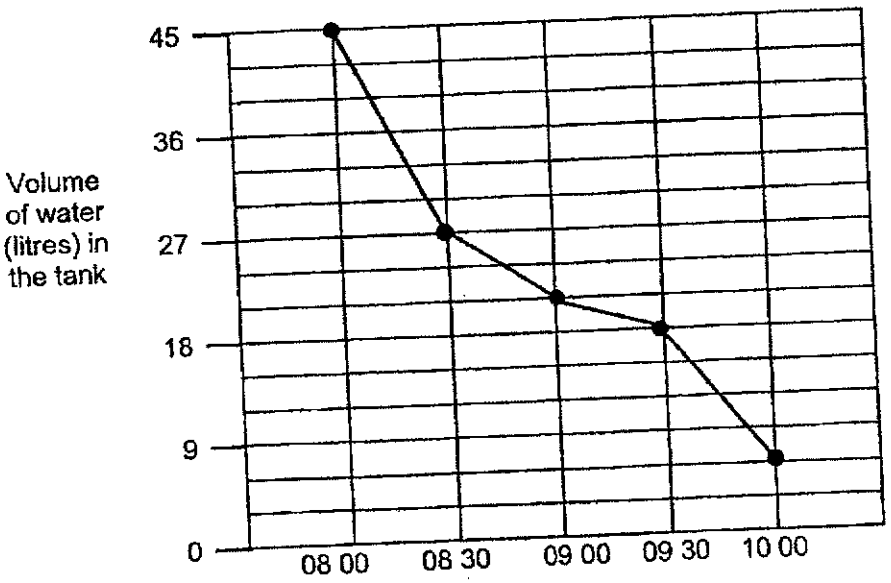


(1) North-west
(2) North-east
(3) South-east
(4) South-west

10. Mary, Nancy and Olivia shared 350 stickers in the ratio 3 : 2 : 5. How many stickers did Mary and Olivia have altogether?

(1) 35
(2) 105
(3) 175
(4) 280

11. A tank was filled with 45 litres of water at 08 00. Water flowed out of the tank from 08 00 to 10 00. The graph below shows the amount of water in the tank at the various intervals.



At what rate was water flowing out of the tank from 09 30 to 10 00?

(1) 6 litres / hour
(2) 12 litres / hour
(3) 18 litres / hour
(4) 24 litres / hour

12. 15% of Jane's earnings is equal to 25% of Alicia's earnings. Jane earns $400 more than Alicia. How much does Jane earn?

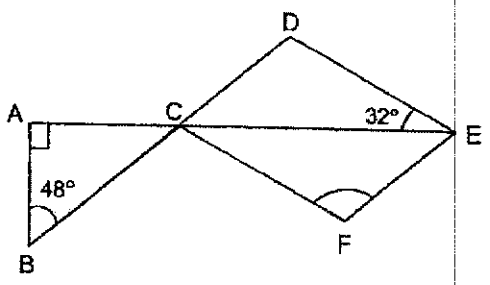
(1) $600
(2) $1000
(3) $1600
(4) $4000

13. Jamie is x years old. Sally's age is $\frac{1}{3}$ of Jamie's age and 5 years older than Betty. How old is Betty?

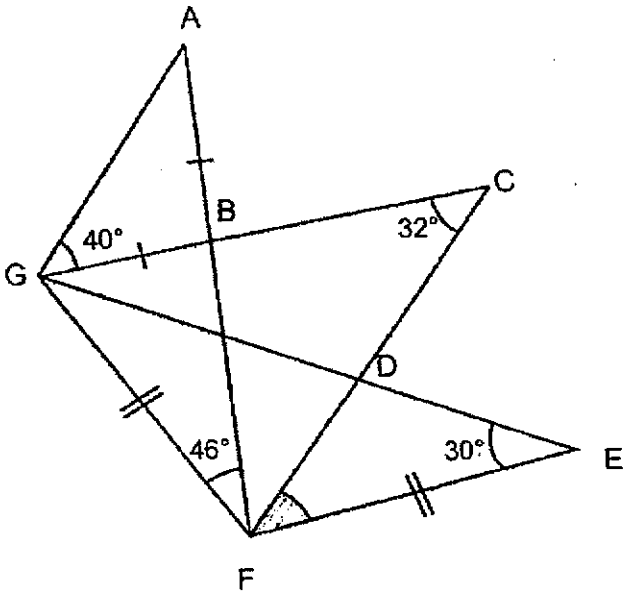
(1) $\frac{x}{3} - 5$
(2) $\frac{x}{3} + 5$
(3) $3x + 5$
(4) $3x - 5$

14. In the figure below, CDEF is a parallelogram. AE and BD are straight lines and ABC is a right-angled triangle. Find $\angle CFE$.

(1) 100°
(2) 106°
(3) 116°
(4) 138°



15. The figure below is made up of 3 overlapping triangles, AFG, CFG and EGF. AB = BG and EF = FG. ∠ DEF = 30°, ∠ AFG = 46°, ∠ AGB = 40° and ∠ FCG = 32°. Find ∠ DFE.



(1) 24°
(2) 26°
(3) 32°
(4) 34°

End of Booklet A
Go on to Booklet B

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MARIS STELLA HIGH SCHOOL (PRIMARY)
PRELIMINARY EXAMINATION
PRIMARY 6 MATHEMATICS
20 AUGUST 2021
PAPER 1
(BOOKLET B)

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

NAME : _____ ( )

CLASS : PRIMARY 6 _____

INSTRUCTIONS TO CANDIDATES

1. Write your Index No. in the boxes at the top right hand corner.
2. Do not turn over this page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Write your answers in this booklet.
6. The use of calculators is **NOT** allowed.

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.

16. Find the value of 2034 – 79.

Answer: _____

17. Find the value of $\frac{2}{5} \div 12$.

Give your answer as a fraction in the simplest form.

Answer: _____

18. Find the value of 0.16 x 40.

Answer: _____

SCORE

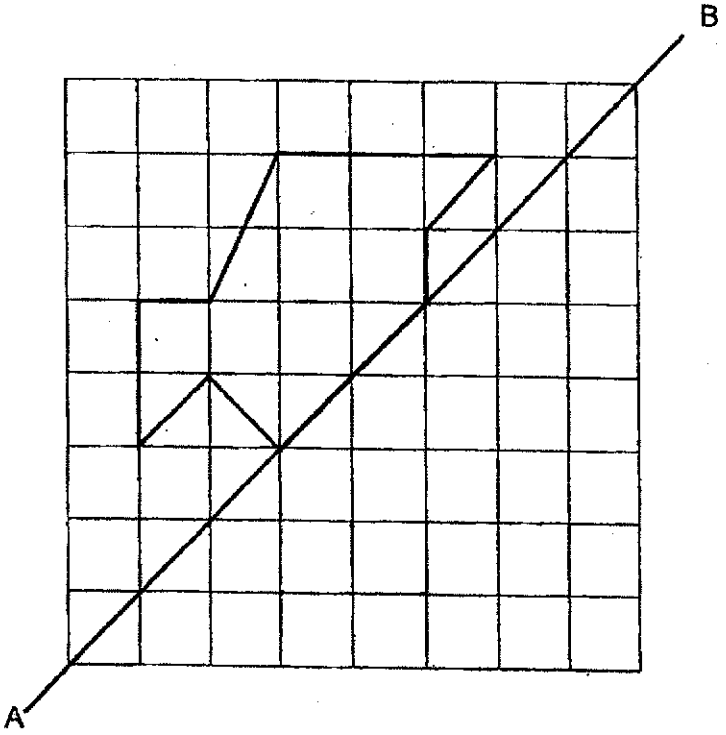
(Go on to the next page)

19. Hakim wants to exchange some tokens at a machine to play some games. He only has $5 notes. Each token can be exchanged with $1. No change can be given by the token machine. He wants to play 9 games. Each game costs 3 tokens. What is the least number of $5 notes he needs to exchange for the tokens?

Do not write in this space.

Answer: _____

20. The diagram below shows part of a symmetrical figure. AB is its line of symmetry. Draw and complete the symmetrical figure in the grid below.



SCORE

(Go on to the next page)

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. (a) Express $\frac{49}{4}$ as a mixed number in the simplest form.

(b) Find the product of $\frac{2}{3}$ and $\frac{9}{11}$.

Answer : (a) _____

(b) _____

22. Lynn, Jeff and Terry each sold an equal number of cookies. Lynn collected a total of $29.40 from selling 6 peanut cookies and some raisin cookies.
Jeff collected a total of $32.10 from selling 9 peanut cookies and some raisin cookies. How much did Terry collect if he sold only raisin cookies?

Answer: $_____

SCORE

(Go on to the next page)

23. The table below shows the answers given by 1200 adults to a survey question. The survey question was: "How often do you eat fruits and vegetables?"

Do not write in this space.

Answers given	Number of adults
Hardly ever	More than half
Sometimes	25%
Often	$\frac{3}{20}$
Very often	Less than 5%

Each statement below is either true, false or not possible to tell from the information given. For each statement, put a tick (√) to indicate your answer.

Statement	True	False	Not possible to tell
400 adults chose "Often" as their survey answer.			
The total number of adults who chose "Sometimes" and "Often" was less than $\frac{3}{5}$ the total number of adults who were being surveyed.			

24. 800g of prawns cost $10.50. How much would 4.8 kg of prawns cost?

Answer: $_____

SCORE

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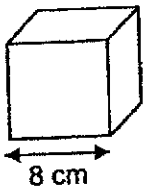
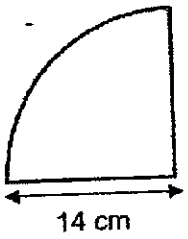
Do not write in this space.

25. (a) Find the volume of the cube.



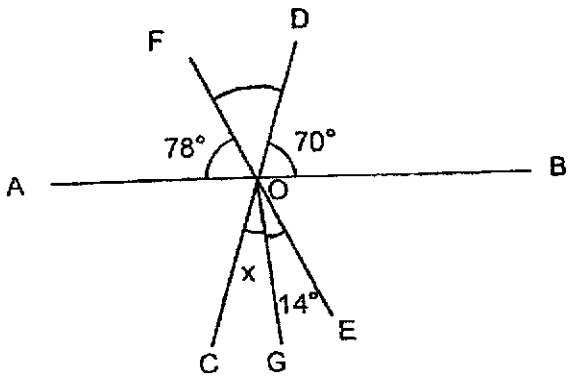
Answer: _____ cm^3

(b) Find the perimeter of the quarter circle. Take $\pi = \frac{22}{7}$.



Answer: _____ cm

26. In the figure below, AB, CD, EF and OG are straight lines. Find $\angle x$.



Answer : _____ °

SCORE

(Go on to the next page)

27. Umar and Raj were sitting on a see-saw, VW , as shown in Figure 1. Triangle XYZ is an isosceles triangle. VW is a straight line, XY = XZ and ∠WXZ = 39°. What angle must Umar move so that ∠VXY = ∠WXZ and VW // YZ in Figure 2?

Do not write in this space.

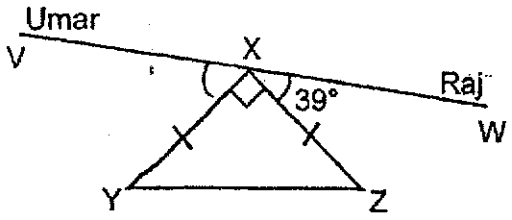


Figure 1

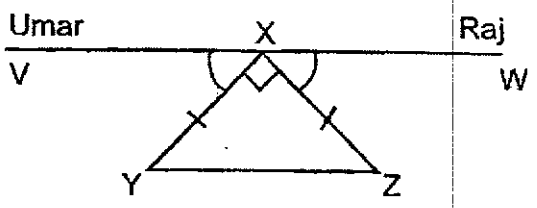
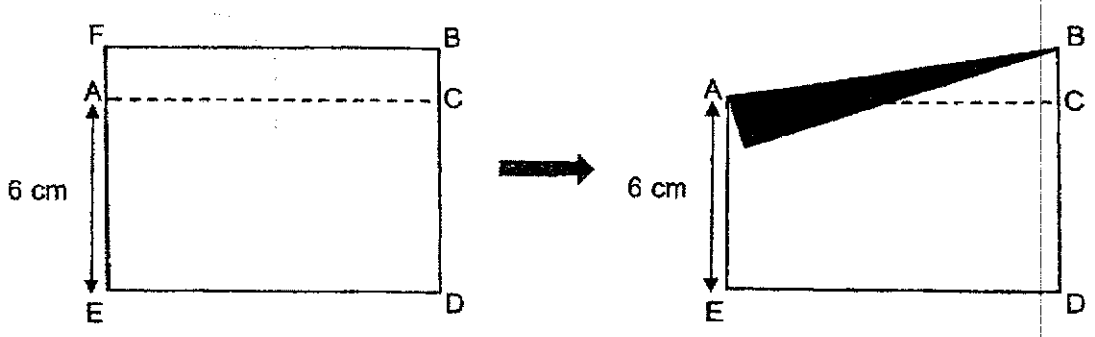


Figure 2

Answer : _____°

28. A rectangular piece of paper FBDE is folded along AB as shown in the figure below. The area of rectangle ACDE is 72 cm². The ratio of the length to the breadth of rectangle FBDE is 4 : 3. Find the area of the shaded triangle.



before folding

after folding

Answer: _____cm²

SCORE

(Go on to the next page)

29. The average height of a group of children was 139 cm. When Mr Lim measured and recorded the height of these children, he wrongly recorded one child's height as 192 cm when it should have been 129 cm. As a result, Mr Lim calculated the average height as 142 cm. How many children were there in the group?

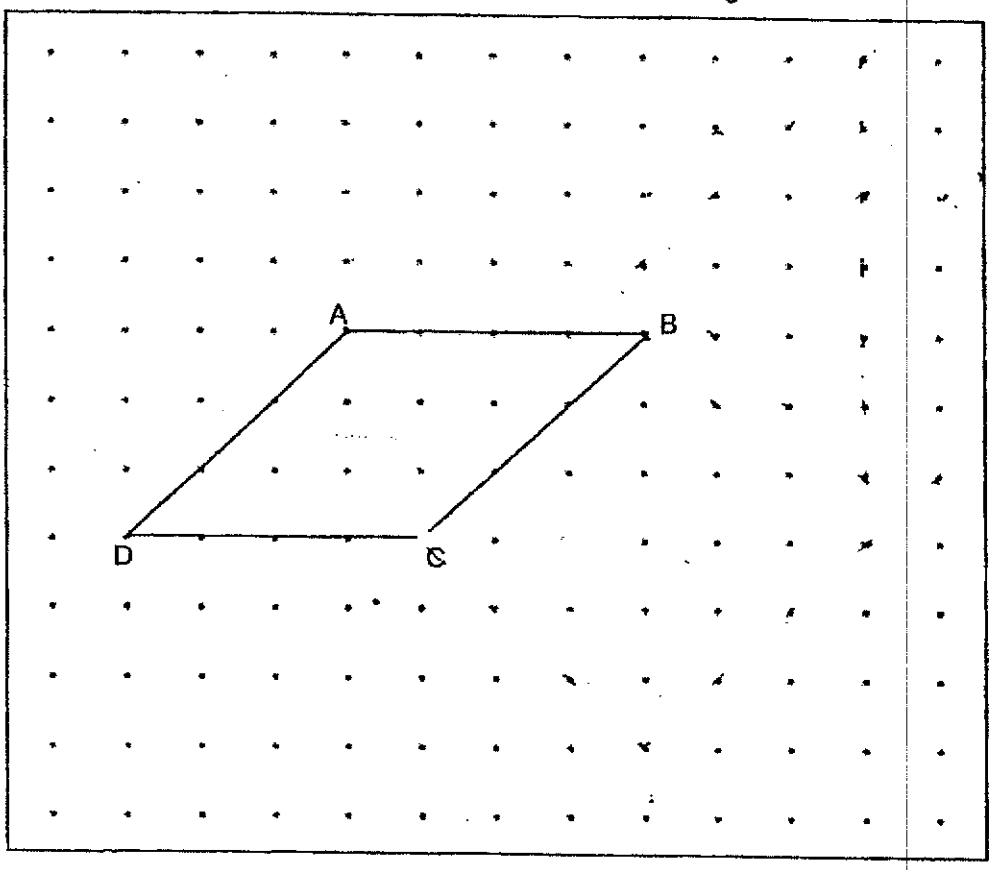
Do not write in this space.

Answer : _____

SCORE

(Go on to the next page)

30. The figure below shows a parallelogram, ABCD, drawn on a grid.



(a) Draw a square BCFG such that each side of the square is equal to the length of BC. Draw BCFG on the grid such that it does not overlap ABCD.

(b) The area of triangle PQR is half the area of BCFG. PQ is parallel to AB. Draw PQR on the grid such that it does not overlap the other two figures.

End of Booklet B

SCORE

PSLE Index No. | | | | | | | – | |

MARIS STELLA HIGH SCHOOL (PRIMARY)
PRELIMINARY EXAMINATION
PRIMARY 6 MATHEMATICS
20 AUGUST 2021
PAPER 2

17 questions
55 marks
Time: 1 h 30 min

NAME : _____ ( )

CLASS : PRIMARY 6 _____

INSTRUCTIONS TO CANDIDATES

1. Write your Index No. in the boxes at the top right hand corner.
2. Do not turn over this page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Write your answers in this booklet.
6. The use of an approved calculator is expected, where appropriate.

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)

Do not write in this space.

1. Ryan had to play four games in Round 1 of a competition. The points he scored for the 1st three games were shown below.

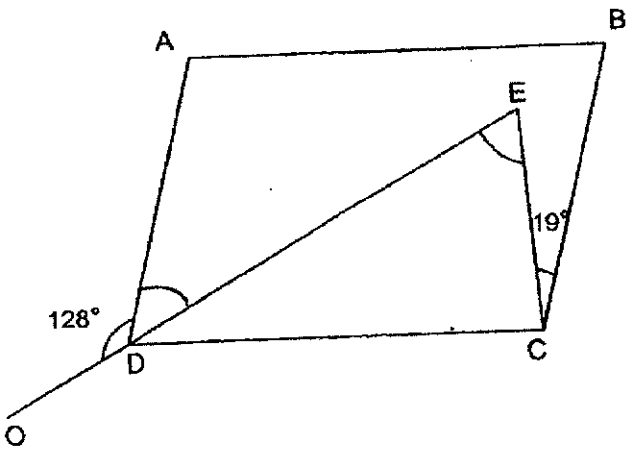
Round 1	
Game	**Score**
1st	34
2nd	41
3rd	39
4th	?

To qualify for Round 2 of the competition, the average score for any 3 games must be at least 42. Each score is a whole number.

Ryan qualified for Round 2. What is the lowest possible score for his 4th game?

Answer: _____

2. The diagram shows a parallelogram ABCD. ODE is a straight line. CDE is a triangle. Find ∠CED.



Answer: _____°

SCORE

(Go on to the next page)

3. $\frac{3}{5}$ of the students are girls. $\frac{1}{6}$ of the girls wear watches. $\frac{2}{5}$ of the students wear watches. What fraction of the boys wear watches?

Do not write in this space.

Answer: _____

4. Three teams of factory workers were packing cartons of packet drinks. Every carton has 24 packets of drinks.

The table below shows the total number of cartons packed by the workers in each team.

Team	Number of workers per team	Total number of cartons packed by each team
A	5	24
B	4	18
C	7	26

What was the average number of packet drinks packed by each worker?

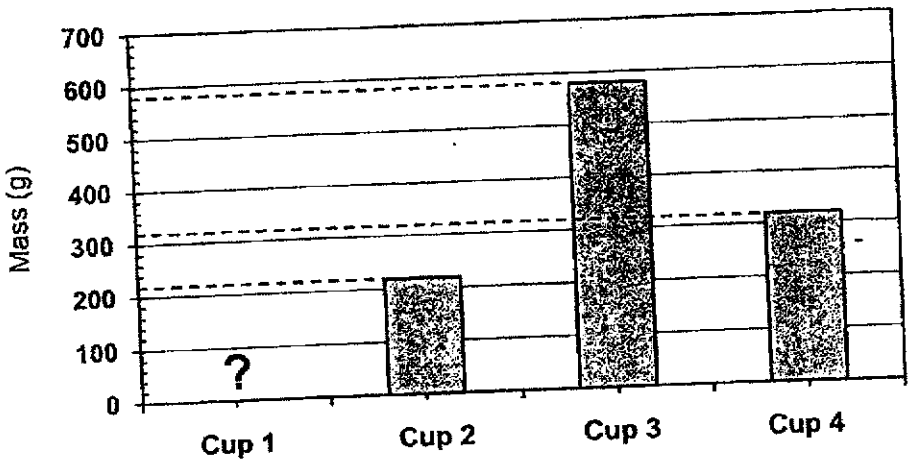
Answer: _____

SCORE

(Go on to the next page)

5. The bar graph shows the different masses of a cup when it is filled with different numbers of objects A and B. The table below shows the objects in each cup.

Cup 1	Cup 2	Cup 3	Cup 4
A, B, B	A, A	B, B	B



What is the mass of Cup 1?

Answer : _____ g

SCORE

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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)

Do not write in this space.

6. Aisha and Betty had the same amount of money at first. After Aisha spent \$280 and Betty spent $\frac{1}{5}$ of her money, the ratio of the amount of money Aisha had left to that Betty had left became 3 : 8. How much money had Aisha left?

Answer: _____ [3]

7. A pair of jeans and 3 identical shirts cost \$484. The pair of jeans cost \$3p more than a shirt.

(a) Express the cost of a shirt in terms of p.

(b) Given that p = 16, find the cost of a pair of jeans.

Answer: (a) _____ [1]

(b) _____ [2]

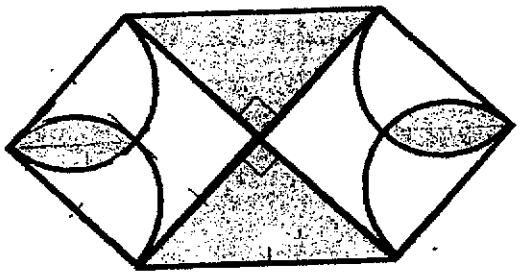
SCORE

(Go on to the next page)

8. The figure shows the design on a rug. The design is made up of 2 identical squares, 2 right-angled triangles and 4 semicircles. The perimeter of each square is 64 cm. Find the shaded area of the rug.

Do not write in this space.

Take $\pi = 3.14$



Answer: _____ [3]

SCORE

(Go on to the next page)

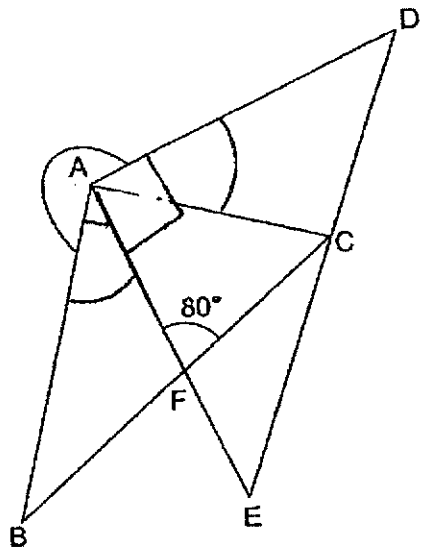
9. 398 nuggets were given to some adults and children at a festival. Each adult was given 5 nuggets and each child was given 3 nuggets. There were 18 more children than adults at the festival. How many children were there at the festival?

Answer: _____ [3]

SCORE

(Go on to the next page)

10. ABC and ADE are right-angled triangles. AF = FC.
Find the marked angle, ∠ DAB.



Do not write in this space.

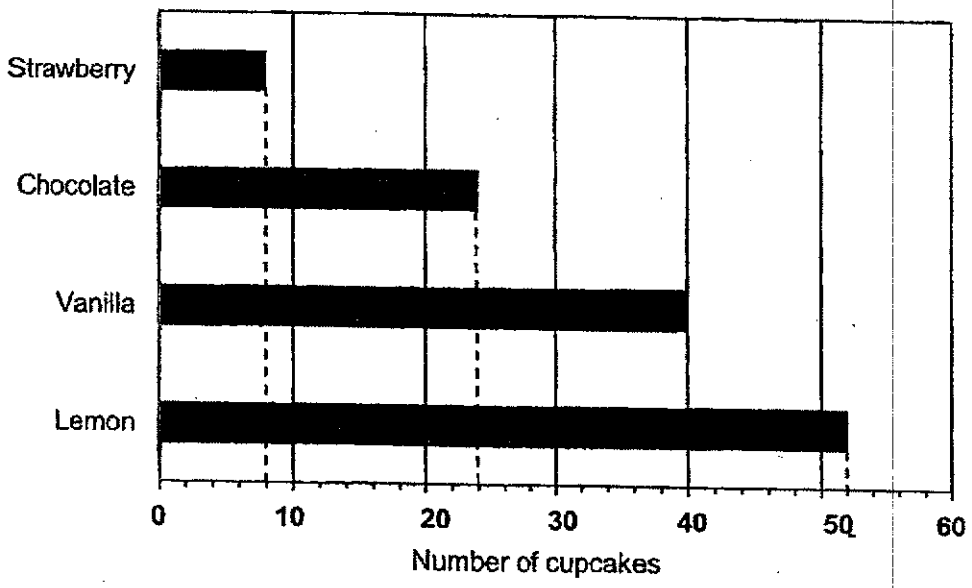
Answer : _____ [3]

SCORE

(Go on to the next page)

11. The bar graph below shows four different kinds of cupcakes sold in a day at a bakery.

Do not write in this space.



(a) Each chocolate cupcake cost $1.30. The bakery collected a total of $72.80 from the sale of the chocolate and lemon cupcakes. What was the price of each lemon cupcake?

(b) What percentage of the cupcakes sold are vanilla? Give your answer correct to 1 decimal place.

Answer : (a)_____ [2]

(b)_____ [1]

SCORE

(Go on to the next page)

12. Samuel and Jaafar had some money each. If Samuel gave Jaafar $480, they will have an equal amount of money. If Samuel gave Jaafar $1120, the ratio of his money to Jaafar's money will be 1 : 3. How much money did Samuel have?

Do not write in this space.

Answer: _____ [4]

SCORE

(Go on to the next page)

13. At the start of a party, $\frac{5}{7}$ of the children were boys and the rest were girls.

After that, some boys left and the remaining number of boys was $\frac{2}{5}$ of the number of children remained at the party. Then, 32 boys joined the party. The number of children became 10 more than that at the start of the party. How many children were there at first?

Do not write in this space.

Answer: _____ [4]

SCORE

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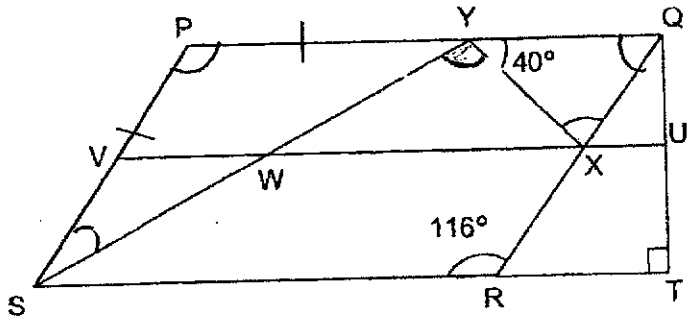
14. In the figure, PQRS is a parallelogram. QRT is a right-angled triangle, VU and SY are straight lines and PS = PY.

(a) Find ∠WYX.

(b) Find ∠YXQ.



Do not write in this space.

Answer : (a)_____ [2]

(b)_____ [2]

SCORE

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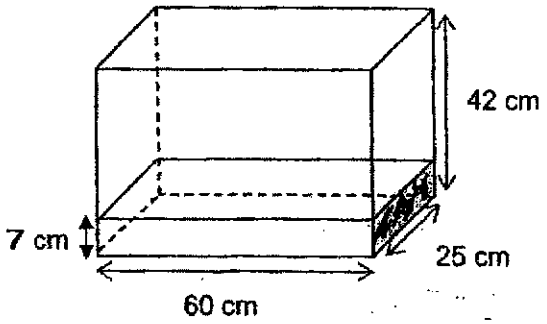
15. A rectangular tank measures 60 cm by 25 cm by 42 cm. It is filled with water to a height of 7 cm. The ratio of the volume of water in the tank to the capacity of the pail is 7 : 3. Joey wants to fill the rest of the tank with the least number of pails of water. How many pails of water does he need?

Do not write in this space.



Tank

Pail

Answer: _____ [5]

SCORE

(Go on to the next page)

16. In a library, there were 160 books on Shelf A. Shelf B has 15% fewer books than Shelf A. The librarian added more books to Shelf B and the number of books on Shelf B increased by 25%. Some children borrowed books from Shelf A and the number of books on Shelf A decreased by 10%.

Do not write in this space.

(a) How many books were there on Shelf B after the librarian had added more books to it?

(b) (i) Was there an overall increase or decrease in the total number of books on both bookshelves in the end?

(ii) What was the percentage increase or decrease in the total number of books on both bookshelves in the end? Round your answer to the nearest whole number.

Answer: (a) _____ [2]

(b) (i) _____ [1]

(ii) _____ [2]

SCORE

(Go on to the next page)

17. John uses some counters and squares to form figures that follow a pattern as shown below.

Do not write in this space.

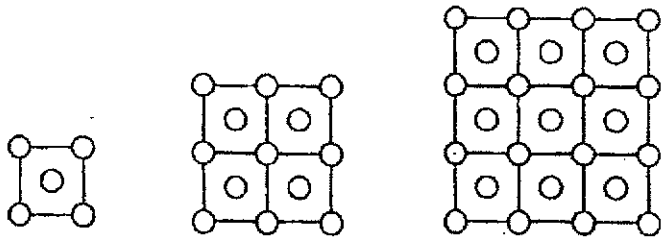


Figure 1 **Figure 2** **Figure 3**

The table below shows the number of squares and counters for the first three figures. Complete the table for Figure Number 4.

Figure Number	No. of squares	No. of counters
1	1	5
2	4	13
3	9	25
4	a (i)_____	a (ii)_____

[1]

(b) A figure in a pattern has 181 counters. What is the Figure Number?

(c) How many more squares need to be added to the figure in (b) to form Figure 99?

Answer: (b)_____ [2]

(c)_____ [2]

End of Paper

SCORE

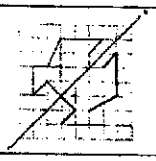
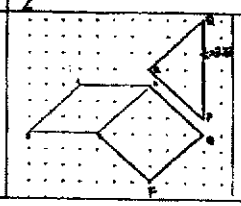
ANSWER KEY

YEAR : 2021
LEVEL : PRIMARY 6
SCHOOL : MARIS STELLA
SUBJECT : MATHEMATICS
TERM : PRELIMINARY

BOOKLET A (PAPER 1)

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

BOOKLET B (PAPER 1)

Q16	1955	Q17	$\frac{1}{30}$
Q18	6.40	Q19	6
Q20		Q21	a) $\frac{49}{4} = 12\frac{1}{4}$ b) $\frac{2}{3} \times \frac{9}{11} = \frac{6}{11}$
Q22	Price diff = 32.10 – 29.40 = 2.70 2.70 x 2 = 5.40 (price diff of 6pc) 29.40 – 5.40 = $24	Q23	False True
Q24	800g = $10.50 800g = 0.8kg 10.50 ÷ 0.8 = 13.125 13.125 x 4.8 = $63	Q25	a) 8 x 8 x 8 = 512cm3 b) 28 + 22 = 50cm
Q26	a) 180°- 70° - 78° = 32° 32° - 14° = 18°	Q27	180° - 90° - 39° = 51° 90° ÷ 2 = 45 51 – 45 = 6°
Q28	72 ÷ 6 = 12 1u = 3 , 3u = 3 x 3 = 9 9 – 6 = 3 $\frac{1}{2}$ x 12 x 3 = 18cm2	Q29	142 – 139 = 3 192 – 129 = 63 63 ÷ 3 = 21
Q30			

PAPER 2

Q1	46	Q2	180° - 128° = 52° 180° - 19° - 52° = 109° 180° - 109° = 71°
Q3	Total pupil = 10u $\frac{2}{5}$ x 10 = 4u $\frac{4}{10} - \frac{1}{10} = \frac{3}{10}$ F = $\frac{3}{4}$	Q4	(576 + 432 + 624) ÷ 16 = 102
Q5	1B = 580 – 320 = 260 320 – 260 = 60 (cup) A= (220 – 60) ÷ 2 = 80 Cup 1 = 80 + 2 x 260 + 60 = 660g	Q6	10 – 3 = 7 7u = $280 1u = $40 3u = $120
Q7	a) $\$(\frac{484-3p}{4})$ b) 3 x 16 = 48 484 – 48 = 436 436 ÷ 4 = 109 109 + 48 = $157	Q8	Side of square = 64 ÷ 4 = 16 16 x 16 = 256 Triangle = $\frac{1}{2}$ x 8 x 8 = 32 Quadrant = $\frac{1}{4}$ x 3.14 x 8 x 8 =50.24 Half leaf = 50.24 – 32 = 18.24 4 x 18.24 = 72.96 256 + 72.96 = 328.96cm2
Q9	398 – 54 = 344 1 set → 5 + 3 = 8 344 ÷ 8 = 43 sets 43 + 18 = 61	Q10	<FAC = (180 – 80) ÷ 2 = 50° 90° – 50° = 40° <DAB = 360° - 40° - 40° - 50° =230°
Q11	a) 41.60 ÷ 52 = 0.80 b) $\frac{40}{124}$ x $\frac{100}{1}$ ≈ 32.3%	Q12	S = 1u + 1120 J = 3u – 1120 2u + 480 = 1u + 1120 1u = 640 Samuel = $640 + $1120 = $1760
Q13	10u + 32 = 21u + 10 11u = 22 , 1u = 2 21u = 2 x 21 = 42	Q14	a) (180 – 116) ÷ 2 = 32 180 – 40 – 32 = 108° b) 180 – 116 = 64 180 – 40 – 64 = 76°
Q15	Volume of tank = 60 x 25 x 42 =63000ml (At First) Volume of water inside = 7 x 60 x 25 = 10500ml (7u) 63000 – 10500 = 52500 7u = 10500 1u = 1500 3u = 4500	Q16	a) Shelf A = 160 Shelf B = $\frac{85}{100}$ x 160 = 136 $\frac{125}{100}$ x 136 = 170 b) (i) Shelf A = 90% x 160 = 144 Total before = 160 + 136 =296

	52500 ÷ 4500 = 11R3000ml 11 + 1 = 12		Total after = 170 + 144 =314 ANS : Increase (ii) 34 – 16 = 18 $\frac{18}{296}$ x 100 ≈ 6%
Q17	a(i) 16 a(ii) 41 b). Fig 1 → 5c → $1^2 + 2^2 = 5$ Fig 2 → 13 → $2^2 + 3^2 = 13$ Formula = (Fig no)^2 + (Fig no+1)^2 No of counter → $10^2 + 9^2 = 181$ ANS : 9 c). Fig 99 → 99 x 99 = 9801 9801 – (9^2) = 9801 – 81 = 9720		

END