METHODIST GIRLS' SCHOOL (PRIMARY)

Founded in 1887

END-OF-YEAR EXAMINATION 2021
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: 28 October 2021

20

8

This booklet consists of X 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 There were 314 089 spectators at a tennis match last year. Express this number to the nearest thousand.

(1) 300 000

(2) 310 000

(3) 314 000

(4) 315 000

2 Express $1\frac{2}{5}$ as a decimal.

(1) 1.25

(2) 1.4

(3) 1.5

(4) 1.52

3 What is the value of $\frac{2}{7} \times \frac{3}{7}$?

(1) $\frac{6}{49}$

(2) $\frac{6}{14}$

(3) $\frac{6}{7}$

(4) $\frac{5}{7}$

(Go on to the next page)

4 What percentage of 24 is 12?

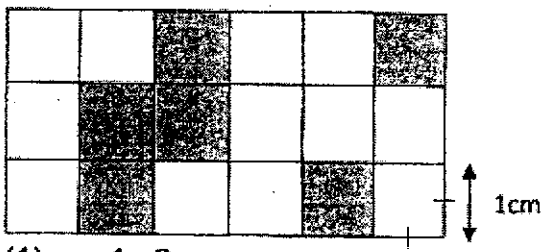
(1) 0.5%

(2) 2%

(3) 50%

(4) 200%

5 What is the ratio of the number of shaded 1-cm squares to the total number of 1-cm squares?



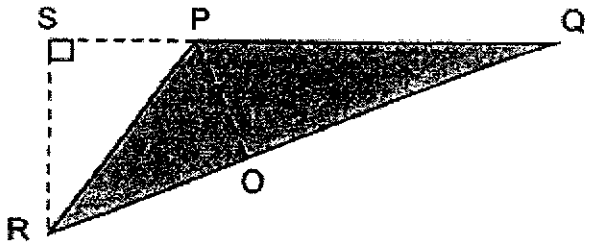
(1) 1 : 2

(2) 1 : 3

(3) 2 : 3

(4) 3 : 1

6 In the figure below, PQ is the base of the triangle PQR and _____ is its height.



(1) SP

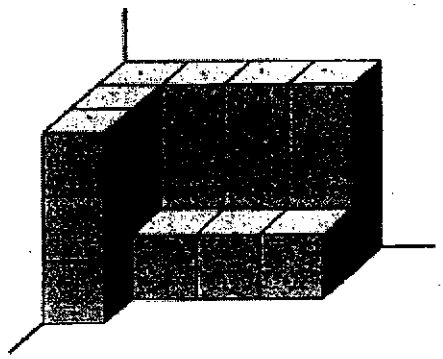
(2) SR

(3) PO

(4) PR

(Go on to the next page)

7 The solid below is built using 1-cm cubes.
What is the volume of the solid in cubic centimetres?



(1) 14 cm^3

(2) 15 cm^3

(3) 19 cm^3

(4) 21 cm^3

8 What is the value of 0.14 × 50?

(1) 0.7

(2) 7

(3) 70

(4) 700

9 Which of the following is the same as 8050 mℓ?

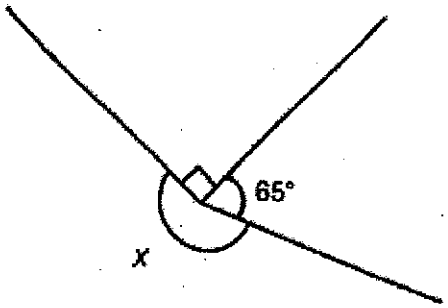
(1) 8 ℓ 5 mℓ

(2) 8 ℓ 50 mℓ

(3) 80 ℓ 5 mℓ

(4) 80 ℓ 50 mℓ

10 The figure below is not drawn to scale. Find $\angle x$.



(1) 155°

(2) 205°

(3) 270°

(4) 295°

11 Find the value of $32 \div (8 - 4) \times 2 + 5$.

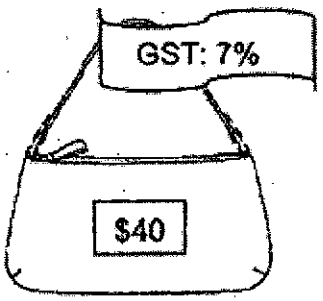
(1) 5

(2) 9

(3) 21

(4) 56

12 Lisa wanted to buy a handbag that cost $40. What would be the amount she needs to pay for the handbag including 7% GST?



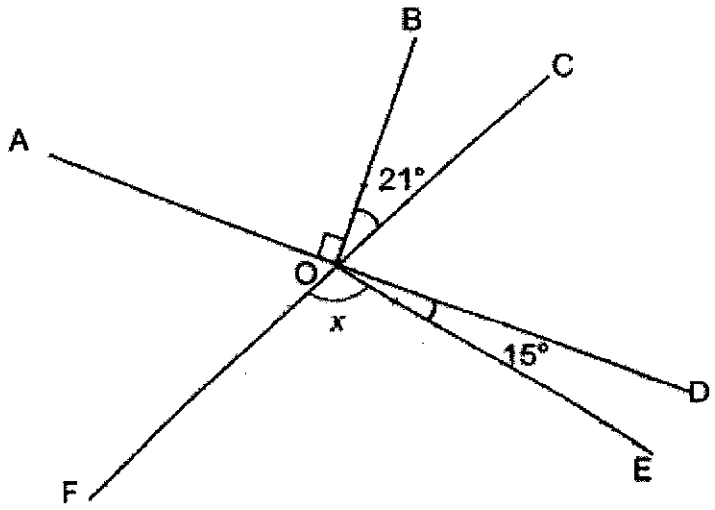
(1) $2.80

(2) $37.20

(3) $42.80

(4) $47.00

13 In the figure below, AOD and FOC are straight lines. Find $\angle x$.



(1) 69°

(2) 75°

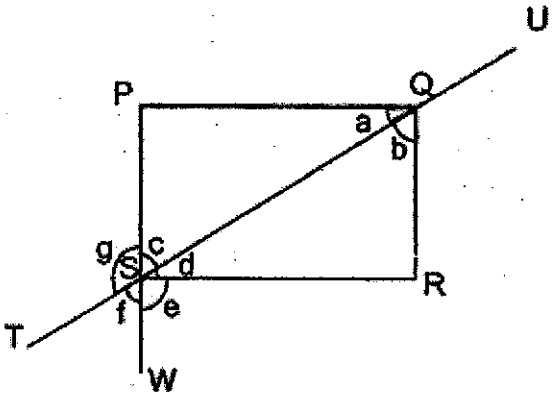
(3) 96°

(4) 111°

(Go on to the next page)

14 In the figure below, PQRS is a rectangle. TU and PW are straight lines.

Which of the following statements are **false**?



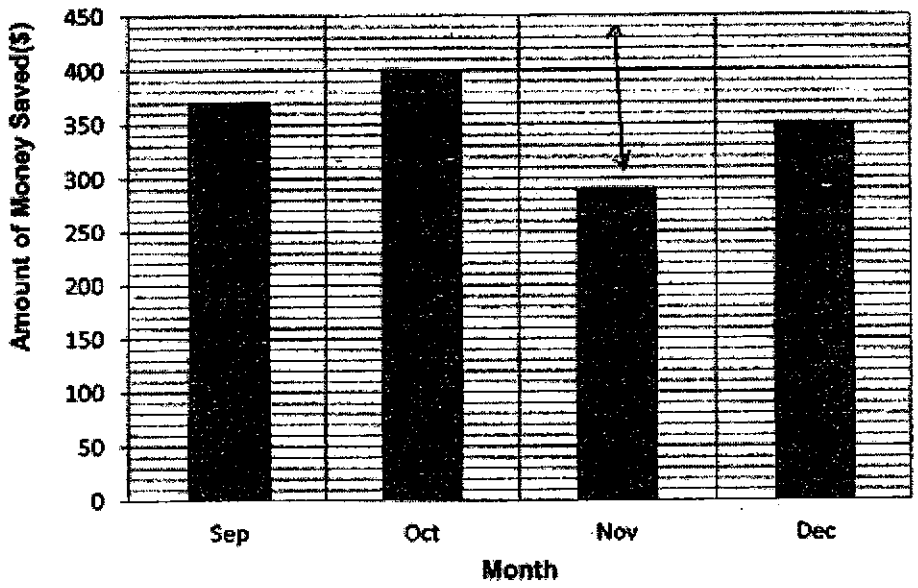
(1) $\angle a = \angle b$ ✓

(2) $\angle c = \angle f$ ✗

(3) $\angle g = \angle d + \angle e$ ✓

(4) $\angle d + \angle f = 90°$ ✓

15 Mr Tan has a fixed salary every month.
Every month, he spends some amount from his salary and saves the rest.
The graph shows the amount of money he saves each month.



In which month did he **spend the most**?

(1) Sep

(2) Oct

(3) Nov

(4) Dec

(Go on to Booklet B)

(Go on to the next page)

METHODIST GIRLS' SCHOOL (PRIMARY)

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END-OF-YEAR EXAMINATION 2021
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: 28 October 2021

Parent's Signature: _____

Paper 1 Booklet A	**/ 20**
Paper 1 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 Write 4 500 809 in words.

Ans: _____

_____

17 Find the value of $\frac{2}{3} + \frac{4}{7}$.

Give your answer as a mixed number in the simplest form.

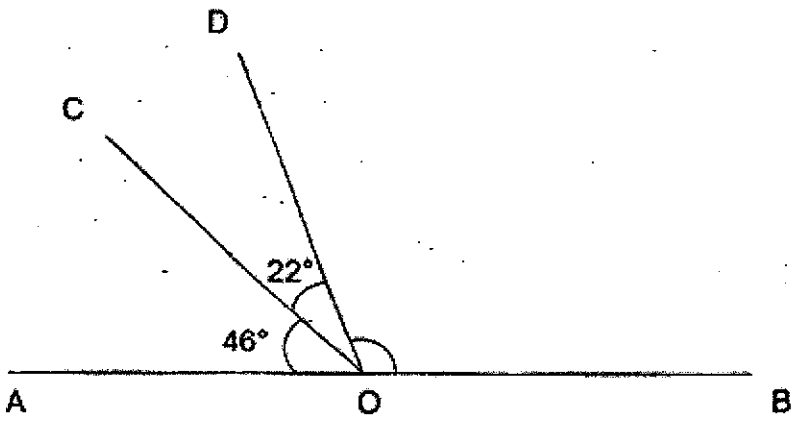
Ans: _____

18 Jimmy has 200 marbles. 40 of the marbles are red. What percentage of the marbles are red?

Ans: _____ %

19 In the figure below, AOB is a straight line. Find ∠ DOB.

Do not write in this space



Ans: _____

20 Express 1060 metres in kilometres.

Ans: _____ km

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 There were 450 spectators at a soccer match. $\frac{3}{5}$ of them were adults and the rest were children. How many children were at the match?

Ans: _____

22 Make the greatest sum by placing the following 5 digits in each of the boxes below. All digits must be used once only.

4 6 7 5 8

$$\square\square\square + \square\square = \_\_\_\_\_$$

Ans: _____

23 Jane has 90 stickers and Renee has 150 stickers. What is the ratio of the number of stickers Jane has to the number of stickers Renee has? Express the ratio in its simplest form.

Do not write in this space

Ans: _____

24 A roll of ribbon is made up of white, grey and black segments. Each segment is 1 cm long. The segments follow a repeated colour pattern as shown below.

Start

A piece of ribbon 45 cm long is cut from the start of the roll. In that piece, how many grey segments are there?

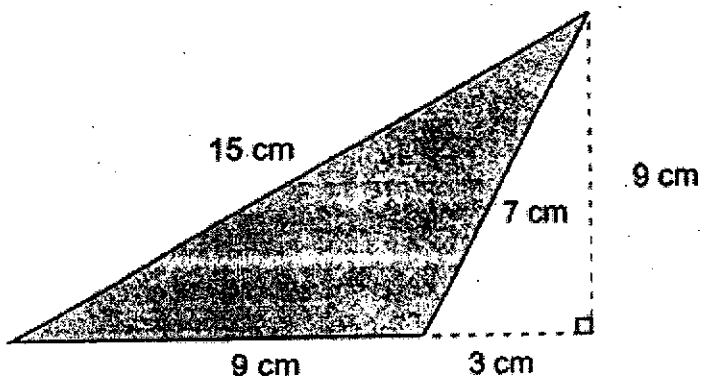
Ans: _____

25 A printer prints 80 pages in 4 minutes. If two identical printers start printing at the same time, how many minutes will it take to print a total of 480 pages?

Ans: _____ min

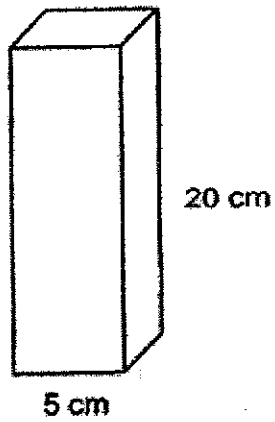
Do not write in this space.

26 Find the area of the shaded triangle.



Ans: _____ cm^2

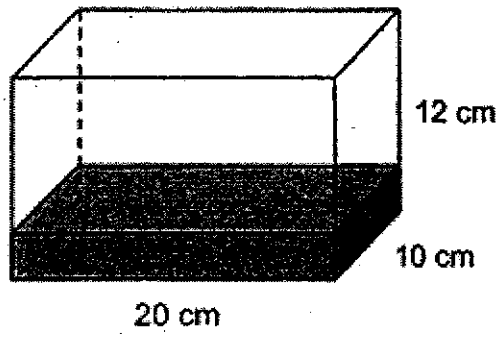
27 Find the volume of the cuboid with a square base.



Ans: _____ cm^3

28 A rectangular tank measuring 20 cm by ~~50~~ 10 cm by ~~80~~ 12 cm contained 1.2 ℓ of water at first. Some water was poured out from the tank until it was $\frac{1}{3}$ full. How much water was poured out of the tank?

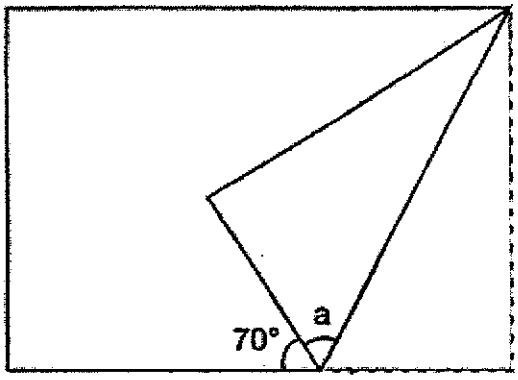
Do not write in this space



Ans: _____ *m* ℓ

29 Sam folded a rectangular piece of paper as shown below.

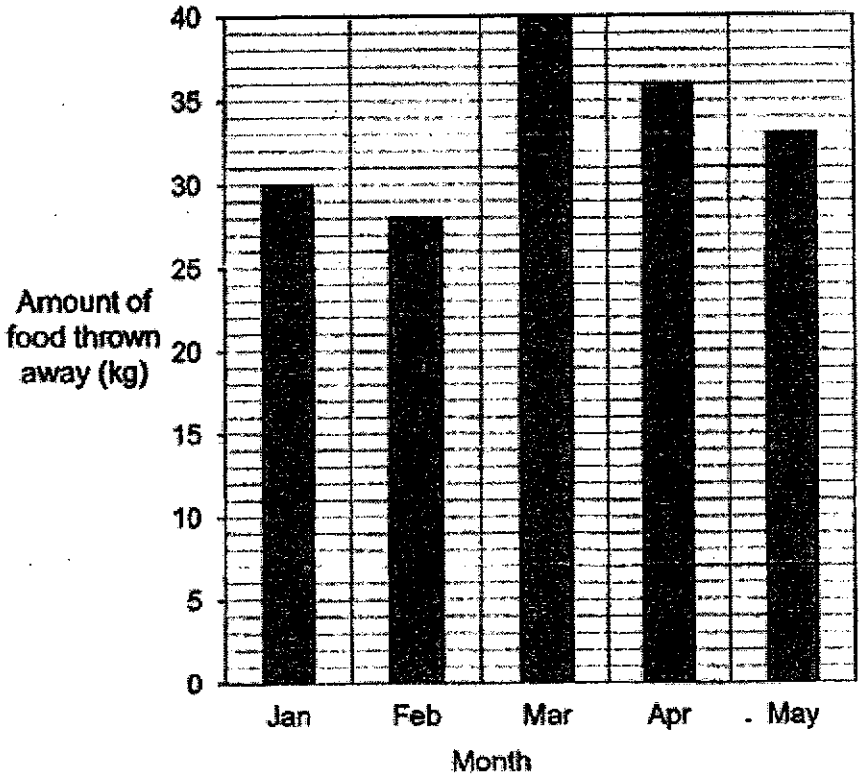
Find $\angle a$.



Ans: _____ °

30 The line graph below shows the amount of food thrown away at a café from January to May.

Do not write in this space



What was the average amount of food thrown away each month?

Ans:_____ kg

END OF PAPER

METHODIST GIRLS' SCHOOL (PRIMARY)

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END-OF-YEAR EXAMINATION 2021
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: 28 October 2021

55

Parent's Signature: _____

This booklet consists of 13 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 Each box of apples contained 25 apples. Adam sold each apple for $0.70. How much money did he collect from the sale of 8 such boxes?

Ans: $_____

2 Find the values of A and B.

$\boxed{A} : 4 : 12 = 6 : \boxed{B} : 9$

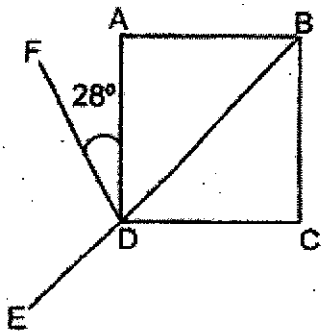
Ans: A = _____

B = _____

(Go on to the next page)

3 ABCD is a square. BDE is a straight line. ∠ADF = 28°. Find ∠FDE.

Do not write in this space



Ans: _____ °

4 Esther packed 2855 sweets equally into 25 bags and had some sweets left. How many sweets had she left?

Ans: _____

Do not write in this space

5 In a basketball game, the average score of 10 players in a team was 13.2 points.

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
(a) Every player scored at least 13 points.			
(b) After including two more players who scored 10 and 12 points respectively, the average score of each player in the team would decrease.			

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 Wesley and Xavier have 217 marbles altogether. Xavier and Yixian have 105 marbles altogether. Wesley has 3 times as many marbles as Yixian. How many marbles does Xavier have?

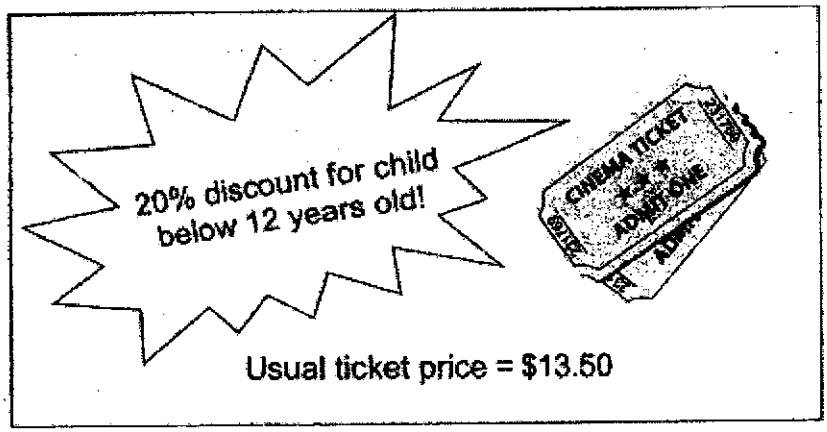
Ans: _____ [3]

7 Joan spent \$168 on a rice cooker and $\frac{3}{8}$ of the remainder of her money on an oven. She then had \$1015 left. How much money did she have at first?

Ans: _____ [3]

8 There was a promotion on movie tickets at Cinema A as shown below. Mr Tan brought his wife and 2 children, aged 10 and 15 years old, to watch a movie at Cinema A together. How much did he pay for the tickets?

Do not write in this space



Ans: _____ [3]

9 Suresh is 12 years old now. The ratio of his age to his brother's age now is 2 : 3. In how many years would the ratio of his age to his brother's age be 5 : 7?

Ans: _____ [3]

10 A rectangular tank measuring 20 cm by 42 cm by 16 cm was $\frac{2}{3}$ filled with water. There was a leak at the bottom of the tank and water seeped out at the rate of 8 $m\ell$ per second.
How many minutes would it take to empty the tank completely?
Leave your answer correct to 1 decimal place.

Do not write in this space

Ans: _____ [3]

11 Thiru played 5 games of bowling. His scores for the first 4 games were 120, 105, 176 and 169 points respectively.
(a) Find his average score for the first 4 games.
(b) After his fifth game, his average score increased by 3.1 points.
Find his score for his fifth game.

Ans: (a) _____ [1]

(b) _____ [3]

(Go on to the next page)

12 The table below shows the parking fees at a car park.

Do not write in this space

First 1 hour or less	$2.50
Every additional 30 minutes or part thereof	$1.20
Overnight parking (from 10 p.m. to 6.30 a.m.)	$10

(a) Tom parked his car at the carpark at noon time for 1 hour and 19 minutes.How much did he have to pay?

(b) Mindy parked her car at the car park from 5.10 p.m. on Monday to 9 a.m. on Tuesday. Find the amount of parking fees that she had to pay.

Ans: (a) _____ [1]

(b) _____ [3]

(Go on to the next page)

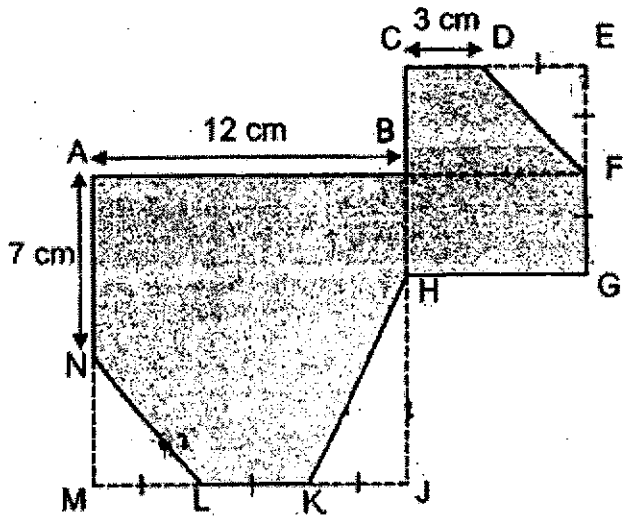
13 June spent $\frac{1}{9}$ of her money to buy 5 m of ribbon. She then spent $\frac{3}{4}$ of her remaining money to buy more ribbon to complete her project. Each meter of ribbon cost \$0.90. How much did she pay for all the ribbon?

Do not write in this space

Ans: _____ [4]

Do not write in this space

14 In the figure below, ABJM is a square and CEGH is a rectangle. AB = 12 cm, AN = 7 cm and CD = 3 cm. DE = EF = FG = ML = LK =KJ. Find the area of the shaded part.



Ans: _____ [4]

15 John and Keith had the same number of sweets. Each of them packed his own sweets into packets. John packed 5 sweets in each packet and had 2 sweets left. Keith packed 8 sweets in each packet and was short of 4 sweets.

(a) How many sweets did each of them have if they used the same number of packets?

(b) What was the smallest possible number of sweets each of them had if they used different number of packets?

Do not write in this space

Ans: (a) _____ [2]

(b) _____ [2]

Do not write in this space

16 Dan had some marbles. He placed $\frac{1}{6}$ of them in Box A and $\frac{1}{4}$ of the remainder in Box B. The rest were placed in Box C. Dan moved 21 marbles from Box C to Box B and some marbles from Box C to Box A. In the end, each box contained the same number of marbles.

(a) What fraction of the marbles was in Box C at first? Give your answer in the simplest form.

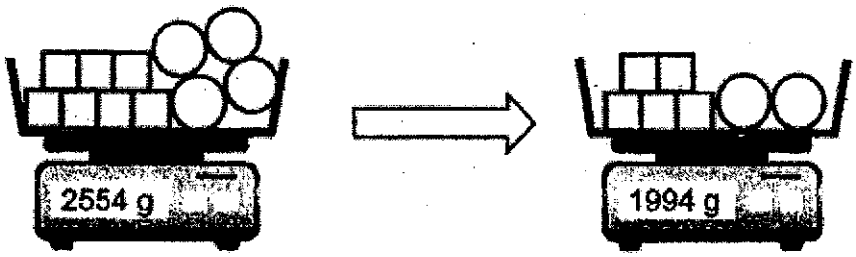
(b) How many marbles were there altogether?

Ans: (a) _____ [2]

(b) _____ [3]

17 The total mass of 7 identical cubes and 4 identical balls in a basket was 2554 g. After Nazim removed 2 cubes and 2 balls from the basket, the total mass became 1994 g. Each ball weighs 24 g more than a cube. Find the mass of the basket in kilograms.

Do not write in this space



Ans: _____ [5]

END OF PAPER

2021 End-Of-Year
P5 Mathematics
Paper 1 Booklet A and Booklet B

Booklet A

Qn	Answer	Qn	Answer
1	3	11	3
2	2	12	3
3	1	13	3
4	3	14	1
5	2	15	3
6	2		
7	4		
8	2		
9	2		
10	2		

Booklet B

Qn	Answer
16	Four million, five hundred thousand, eight hundred and nine.
17	$\frac{2}{3} + \frac{4}{7} = \frac{14}{21} + \frac{12}{21}$ $= \frac{26}{21}$ $= 1\frac{5}{21}$
18	$\frac{40}{200} \times 100\% = 20\%$
19	$180° - 46° - 22° = 112°$ (angles on a straight line)
20	1000 m = 1 km 1060 m ÷ 1000 = 1.06 km
21	Fraction of children $= 1 - \frac{3}{5}$ $= \frac{2}{5}$ Number of children $= \frac{2}{5} \times 450$ $= \underline{180}$

22	875 + 64 = 939 OR 874 + 65 = 939 OR 865 + 74 = 939 OR 864 + 75 = 939 Note the digits in the tens place have to be the 2nd and 3rd largest value, thus either 6 or 7 has to be placed in the tens place.
23	J : R 90 : 150 = **3 : 5**
24	1 set = 5 segment of 1 cm = 2 greys segments No. of sets in 45 cm = 45 ÷ 5 = 9 No. of grey segments in 45 cm = 9 × 2 = **18**
25	Method 1 80 pages × 2 =160 → 4 min (2 printers start printing at the same time) 480 pages → 4 min × 3 = **12 min** Method 2 80 pages → 4 min 480 pages → 480 ÷ 80 = 6 min 6 min × 2 = **12 min** (2 printers start printing at the same time) Method 2 4 min → 80 ×2 = 160 pages (2 printers start printing at the same time) 480 ÷ 160 = 3 3 × 4 min = **12 min**
26	Area of shaded triangle = $\frac{1}{2}$ × 9 cm × 9 cm = **40.5** cm²
27	Volume of cuboid = 20 cm × 5 cm × 5 cm = **500** cm³
28	Volume of water left in the tank = $\frac{1}{3}$ × 20 cm × 10 cm × 12 cm = 800 cm³ 800 cm³ = 800 mℓ 1.2 ℓ = 1.2 ×1000 mℓ = 1200 mℓ Volume of water poured out = 1200 – 800 = **400** mℓ

29	$\angle a + \angle a = (180° - 70°)$ $= 110°$ $\angle a = 110° \div 2$ $= \underline{55}°$
30	Total amount of food thrown away = 30 + 28 + 40 + 36 + 33 = 167 Average of food thrown away = 167 ÷ 5 = <u>33.4</u>

METHODIST GIRLS' SCHOOL (PRIMARY)
END-OF-YEAR EXAMINATION 2021
PRIMARY 5 MATHEMATICS
ANSWER KEY

Paper 2

1 Total amount collected = 8 x 25 x 0.70
= **$140**

---

2 A = 8 [A1]
B = 3 [A1]

---

3 ∠FDE = 180° - 28° - 45°
= **107°**

---

4 Method 1
2855 ÷ 25 = 114.2
Number of sweets left = 0.2 x 25
= 5

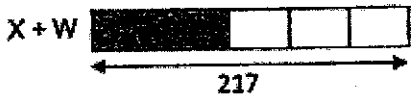
Method 2
2855 ÷ 25 = 114.2
Number of sweets packed = 114 x 25
= 2850
Number of sweets left = 2855 – 2850
= 5

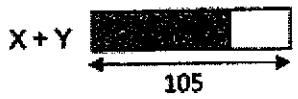
Method 3
2855 ÷ 25 = 114 R5 [M1]
Number of sweets left = 5

5

Statement	True	False	Not possible to tell
(a) Every player scored at least 13 points.			✓
(b) After including two more players who scored 10 and 12 points respectively, the average score of each player in the team would decrease.	✓		

6





2 units = 217 – 105
= 112
1 unit = 112 ÷ 2
= 56
Number of marbles that Xavier has = 105 – 56
= **49**

---

7 $\frac{5}{8}$ of remaining money = \$1015

All of remaining money = $\frac{1015}{5} \times 8$
= \$1624
Amount of money at first = \$1624 + \$168
= **\$1792**

---

8 Cost of discounted child ticket $= \frac{80}{100} \times 13.50$

$= \$10.80$

Total cost for 4 tickets $= 3 \times 13.50 + 10.80$

$= \underline{\$51.30}$

---

9 Method 1

Age now:	Age later
S : B : Difference	S : B : Difference
2 : 3 : 1	5 : 7 : 2
12 : 18 : 6	15 : 21 : 6

Number of years later $= 15 - 12$ or $21 - 18$

$= \underline{3}$

Method 2

Brother's age now $= \frac{12}{2} \times 3$

$= 18$ years old

Age difference $= 18 - 12$

$= 6$

Suresh's age then $= 5 \times \frac{6}{2}$ Brother's age then $= 7 \times \frac{6}{2}$

$= 15$ $= 21$

Number of years later $= 15 - 12$ or $21 - 18$

$= \underline{3}$

---

10 Volume of water in tank $= \frac{2}{3} \times 20 \times 42 \times 16$

$= 8960 \text{ cm}^3$

$= 8960 \text{ m}\ell$

Time taken to empty tank $= 8960 \div 8$

$= 1120$ sec

$\approx \underline{\textbf{18.7 min (correct to 1 decimal place)}}$

11 (a) Average score for first 4 games = (120 + 105 + 176 + 169) ÷ 4

= **142.5 points**

(b) Method 1

Average score for 5 games = 142.5 + 3.1

= 145.6 points

Total score for 5 games = 5 x 145.6

= 728 points

Score for the 5th game = 728 – 570

= **158 points**

Method 2

Score for the 5th game = 142.5 + 5 x 3.1

= **158 points**

---

12 (a) Amount that Tom has to pay = 2.50 + 1.20

= **$3.70**

(b) (1st day) Time from 5.10 pm to 6.10 pm (1st hour) = 1 h

(1st day) Time from 5.10 pm to 10 pm = 3 hours 50 minutes

(2nd day) Time from 6.30 am to 9 am = 2 hours 30 minutes

Total number of hours excluding first hour = 6 h 20 min

Total parking fees payable = $2.50 + 13 x $1.20 + $10

= $2.50 + $15.60 + $10

= **$28.10**

---

13 Fraction of money spent on buying ribbon $= \frac{1}{9} + \frac{3}{4} \times \frac{8}{9}$

$= \frac{1}{9} \div \frac{2}{3}$

$= \frac{7}{9}$

Total length of ribbon used = 7 x 5

= 35 m

Total cost of ribbon = 35 x 0.90

= **$31.50**

14 DE = EF = = FG = ML = LK = KJ = 12 ÷ 3

= 4 cm

Total area = 12 x 12 + 7 x 8

= 200 cm²

Area of ΔNML = $\frac{1}{2}$ x 5 x 4

= 10 cm²

Area of ΔKJH = $\frac{1}{2}$ x 8 x 4

= 16 cm²

Area of ΔDEF = $\frac{1}{2}$ x 4 x 4

= 8 cm²

Area of shaded figure = 200 – 10 – 16 – 8

= **166 cm²**

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15 Method 1

Excess + Shortage = 4 + 2 = 6

Difference between the multiples = 8 – 5 = 3

Gap divided by difference = 6 ÷ 3 = 2

(a) Number of sweets = 5 x 2 + 2 or 8 x 2 - 4

= **12**

(b) Smallest possible number of sweets = 12 + 5 x 8

= **52**

Method 2

(a)

No. of pkts / No. of sweets	1	2
Multiples of 5	5	10
+ 2	7	12
Multiples of 8	8	16
- 4	4	12

No. of sweets = 12

(b)

No. of pkts / No. of sweets	1	2	3	4	5	6	7	8	9	10
Multiples of 5	5	10	15	20	25	30	35	40	45	50
+2	7	12	17	22	27	32	37	42	47	52
Multiples of 8	8	16	24	32	40	48	56			
-4	4	12	20	28	36	44	52			

Smallest possible number of sweets = **52**

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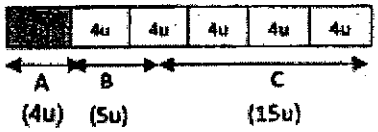
16 (a) Method 1



Fraction of marbles which are in Box C $= \frac{15}{24}$

$= \frac{5}{8}$

Method 2

Fraction of marbles which are in Box C $= \frac{3}{4} \times \frac{5}{6}$

$= \frac{15}{24}$

$= \frac{5}{8}$

(b) No. of units per box in the end = 24 + 3

= 8

8 units – 5 units = 21

3 units = 21

1 unit = 21 + 3

= 7

24 units = 24 x 7

= **168**]

There were 168 marbles altogether.

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17 Mass of 2 cubes and 2 balls = 2554 – 1994

= 560 g

4 units = 560 – 2 x 24

= 512

1 unit = 512 ÷ 4

128

Mass of 1 cube = 128g

Mass of 1 ball = 128 + 24

= 152g

Mass of basket

= 2554 – 7 x 128 – 4 x 152 OR 1994 – 5 x 128 – 2 x 152

= 1050g

= 1.05kg