METHODIST GIRLS' SCHOOL (PRIMARY)

Founded in 1887

PRELIMINARY EXAMINATION 2020
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 **NOT** allowed.

Name: _____ ( )

Class: Primary 6._____

Date: 21 August 2020

20

This booklet consists of 7 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 What is the value of $5b - 4 + 2b$ when $b = 6$?

(1) 14
(2) 18
(3) 22
(4) 38

2 What is the value of $100 \div 4000$?

(1) 40
(2) 25
(3) 0.4
(4) 0.025

3 There are 60 cookies in a box. 36 of them are chocolate cookies and the rest are raisin cookies. What is the ratio of the chocolate cookies to the total number of cookies in the box?

(1) 2 : 5
(2) 5 : 2
(3) 3 : 5
(4) 5 : 3

4 Express $1\frac{5}{8}$ as a decimal.

(1) 0.625
(2) 1.58
(3) 1.625
(4) 2.60

5 Find the value of $\frac{2}{9} \div \frac{5}{12}$.

(1) $\frac{8}{15}$

(2) $\frac{15}{8}$

(3) $\frac{5}{54}$

(4) $\frac{54}{5}$

6 Find the average of this set of numbers.

33 , 27 , 0 , 45 , 15

(1) 60

(2) 40

(3) 30

(4) 24

7 Mr Lim bought 20 marbles for $5. How much did one marble cost?

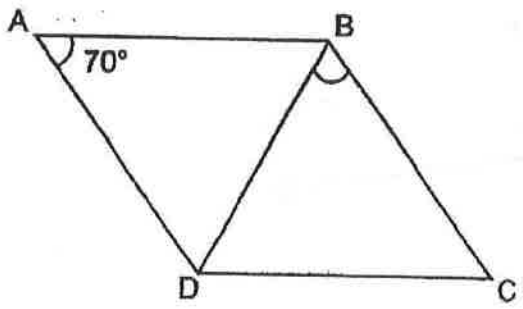
(1) $ 0.25

(2) $ 0.40

(3) $ 2.50

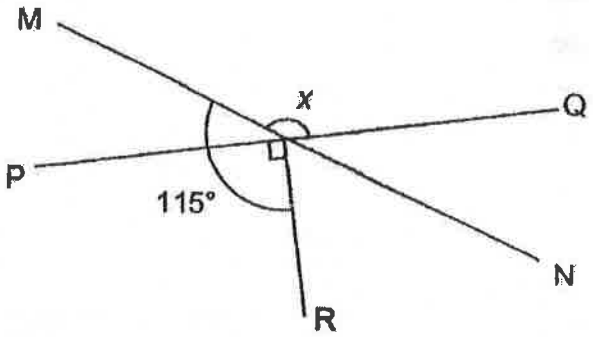
(4) $ 4.00

8 ABCD is a rhombus. $\angle DAB = 70°$. Find $\angle CBD$.



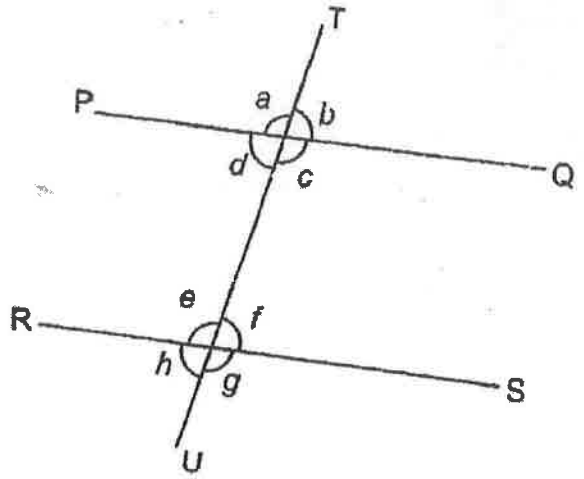
(1) 35°
(2) 55°
(3) 70°
(4) 110°

9 MN and PQ are straight lines. Find $\angle x$.



(1) 25°
(2) 65°
(3) 115°
(4) 155°

10 In the figure below, PQ is parallel to RS and TU is a straight line.



Which one of the following statements is true?

(1) $\angle a + \angle c = \angle b + \angle d$

(2) $\angle a + \angle e = \angle c + \angle g$

(3) $\angle f + \angle g = \angle a + \angle c$

(4) $\angle c + \angle e = \angle d + \angle f$

11 In a school carnival, 25% of the participants were adults and the rest were children. 40% of the children were girls. What percentage of the participants were boys?

(1) 10%

(2) 35%

(3) 45%

(4) 60%

12 The advertisement below is displayed outside a furniture shop.
How much is the discount for the table?

(1) $168

(2) $252

(3) $280

(4) $1050

13 A bag contains beads of three colours. $\frac{1}{4}$ of the beads are blue.
The ratio of the number of red beads to the number of green beads is 4 : 5.
What fraction of the total beads are the red beads?

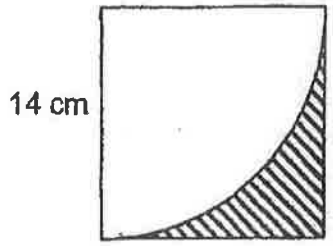
(1) $\frac{1}{3}$

(2) $\frac{2}{5}$

(3) $\frac{4}{9}$

(4) $\frac{5}{12}$

14 The figure shows a square and a quarter circle. Find the perimeter of the shaded part. Take $\pi = \frac{22}{7}$.



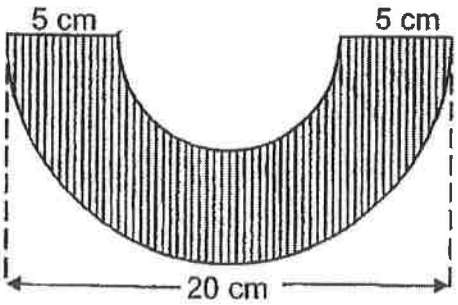
(1) 22 cm

(2) 42 cm

(3) 50 cm

(4) 116 cm

15 The figure is made up of 2 semi-circles. Find the area of the shaded figure in terms of π.



(1) $12\frac{1}{2}\pi$ cm²

(2) $37\frac{1}{2}\pi$ cm²

(3) 50π cm²

(4) 75π cm²

(Go on to Booklet B)

METHODIST GIRLS' SCHOOL (PRIMARY)

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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 **NOT** allowed.

Name: _____ ( )

Class: Primary 6. _____

Date: 21 August 2020

Paper 1 Booklet A	**/ 20**
Paper 1 Booklet B	**/ 25**
Paper 2	**/ 55**
TOTAL	**/ 100**

Parent's Signature: _____

This booklet consists of _ 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 three million, forty thousand and one in figures.

Ans: _____

17 The number of people in the hall, when rounded to the nearest hundred is 3 000. What is the smallest possible number of people in the hall?

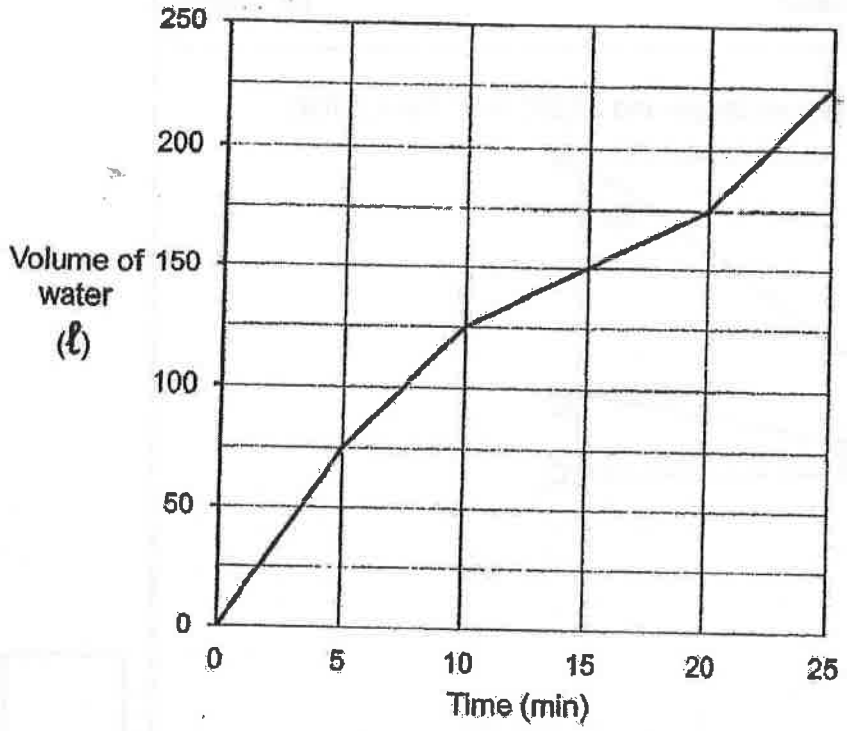
Ans: _____

18 Sarah bought 10 m of lace. She cut the lace equally into smaller pieces. Each smaller piece was $\frac{2}{5}$ m long. How many smaller pieces of lace were there?

Ans: _____

Do not write in this space

19 Water flowed into an empty tank. The tank was completely filled with water at the end of 25 min.



What fraction of the tank was filled with water at the end of 15 min? Give your answer in the simplest form.

Ans: _____

20 A hawker makes about 600 fish balls every 12 minutes. At this rate, how many fish balls can he make in one minute?

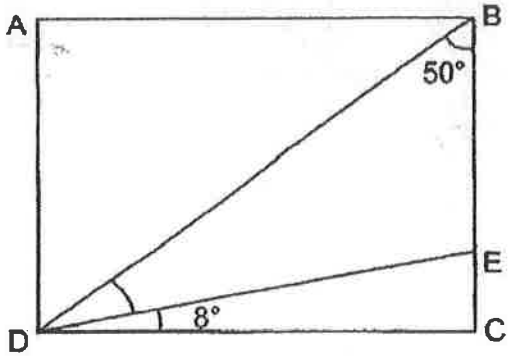
Ans: _____

(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)**

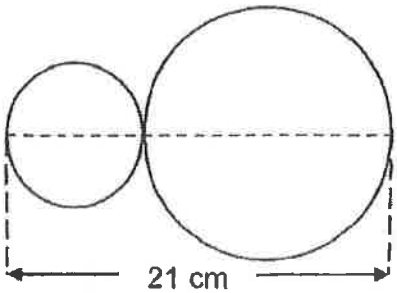
Do not write in this space

21 In the figure, ABCD is a rectangle and $\angle EDC = 8°$. Find $\angle BDE$.



Ans: _____ °

22 A piece of wire was bent to form the following figure which was made up of 2 circles. The diameter of the big circle to the diameter of the small circle is in the ratio of 2 : 1. There was 4 cm of the wire left after making the figure. Find the total length of the wire. (Take $\pi = \frac{22}{7}$)

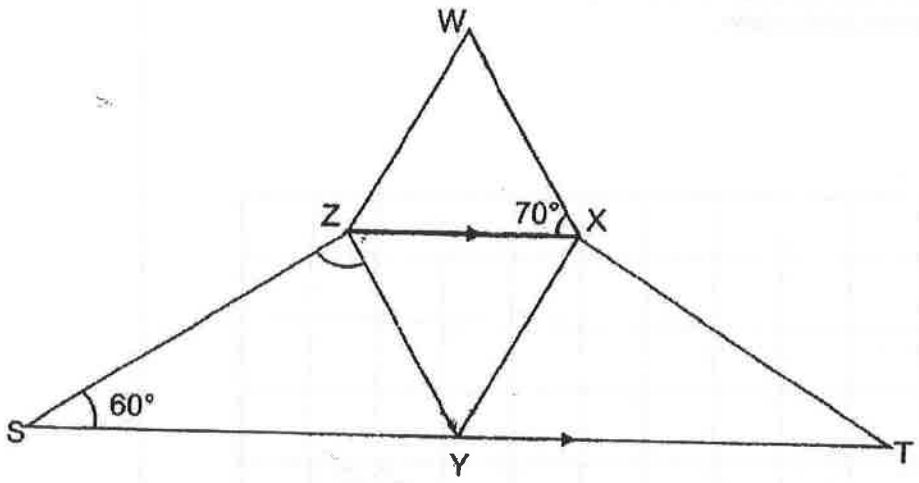


Ans: _____ cm

(Go on to the next page)

23 In the figure below, WXYZ is a rhombus and ZXTS is a trapezium. Find ∠SZY.

Do not write in this space



Ans: _____ °

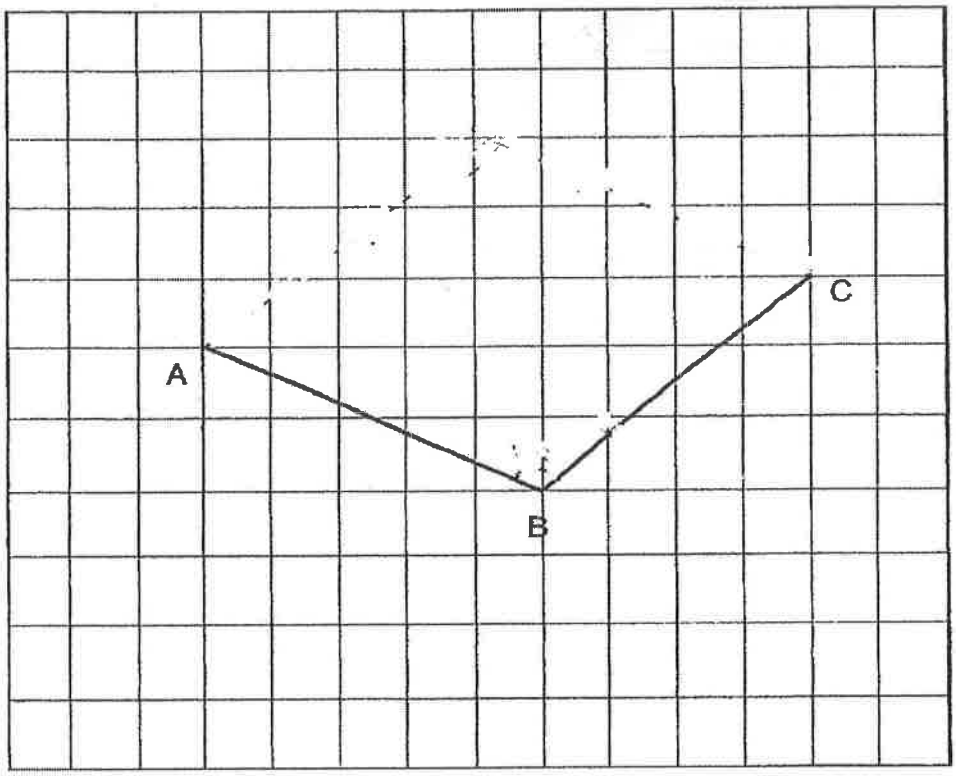
(Go on to the next page)

Do not write in this space

24 AB and BC are two sides of a rhombus ABCD.

(a) Measure ∠ABC.

(b) Complete the rhombus by drawing the other two sides, AD and DC, in the square grid below.



Ans: (a) _____ °

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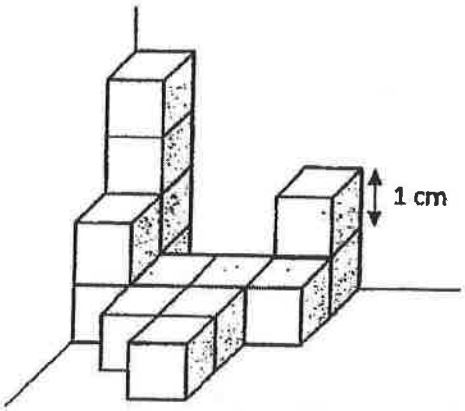
25 The solid below is formed by identical cubes of side 1-cm.
How many **more** of such cubes are needed to form a 4-cm cube?



Ans: _____

26 For every $4.50 that Jane saved in her piggy bank, her mother would give her an additional 50 cents. When Jane had $100 in her savings, how much of it was given by her mother?

Ans: $ _____

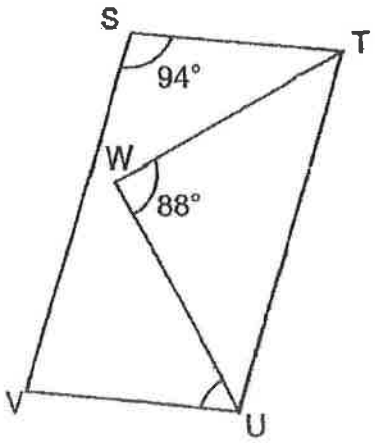
(Go on to the next page)

Do not write in this space

27 Serene bought $2n$ packets of sweets. Each packet contained 15 sweets. After eating 11 sweets, how many sweets had she left? Express the answer in terms of n in the simplest form.

Ans: _____

28 STUV is a parallelogram, $\angle VST = 94°$ and WU = WT. $\angle UWT = 88°$. Find $\angle VUW$.



Ans: _____ °

(Go on to the next page)

29 A bus has a seating capacity of either 36 adults or 54 children. After 4 adults and 39 children have boarded the bus, at most, how many **more** children can still board the bus?

Do not write in this space

Ans: _____

30 The table below shows the number of goals scored by each basketball player of a basketball club.

No. of goals scored by each player	0	1	2	3	4
Number of players	8	15	7	?	6

75% of the players scored fewer than 3 goals. How many players scored 3 goals?

Ans: _____

End of Paper 1

METHODIST GIRLS' SCHOOL (PRIMARY)

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PRELIMINARY EXAMINATION 2020
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: _____ ( )

Class: Primary 6. _____

Date: 21 August 2020

55

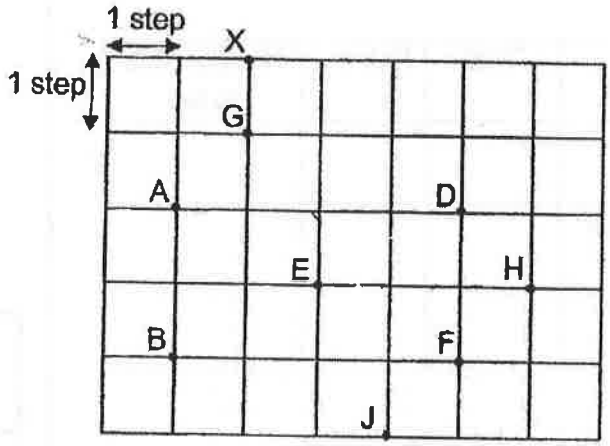
Parent's Signature: _____

This booklet consists of **15** 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 Study the diagram below. Nine landmarks on a street directory are shown in the square grid below.



(a) Peter was standing at E He walked 1 step North and 2 steps East. At which landmark would he be at?

(b) John was at one of the landmarks. He was facing East. He turned 45° clockwise and faced F. At which landmark was John at?

Ans: (a) _____

(b) _____

2 Mr Tan paid $126 for 45 markers. If each marker was $0.80 cheaper, how many **more** markers could he buy with the same amount of money?

Ans: _____

Do not write in this space

3 Jane puts her collection of stamps onto 3 albums. The first album has 20 stamps. The second album has $4k$ stamps and the third album has $(4+k)$ stamps.

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

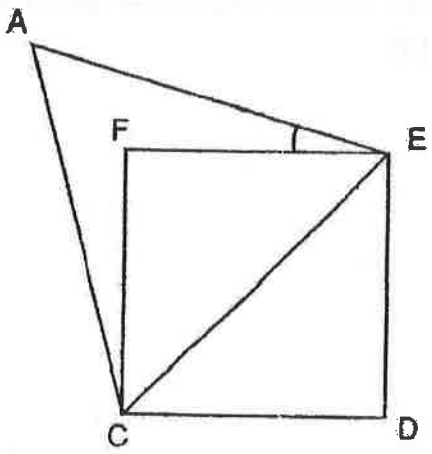
Statement	True	False	Not possible to tell
The first album has the most number of stamps.			
The third album has fewer stamps than the second album.			
The total number of stamps in the 3 albums is $(5k + 24)$.			

4 Machine A can produce 200 toys in 1 hour. Machine B can produce 10% fewer toys than Machine A in an hour. How long will it take to produce 2280 toys if both machines are used at the same time?

Ans: _____

5 In the diagram below, CDEF is a square and ACE is an equilateral triangle. Find ∠AEF.

Do not write in this spac



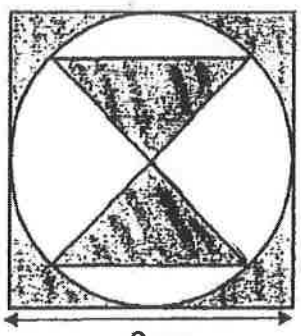
Ans: _____ °

(Go on to the next page)

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)

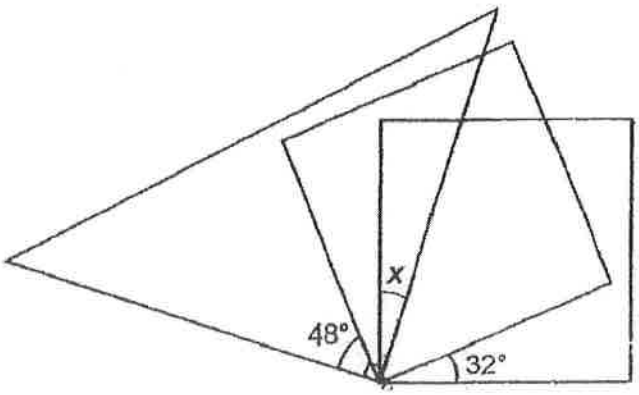
Do not write in this space

6 The figure is formed by a square, a circle and 2 identical isosceles triangles. The length of square is 6 cm. What is the area of the shaded part? (Take $\pi = 3.14$)



Ans: _____ [3]

7 The figure, not drawn to scale, shows 2 identical squares and a right-angle triangle. Find $\angle x$.



Ans: _____ [3]

8 The graph below shows the number of tables in the Primary classrooms in Victory School.

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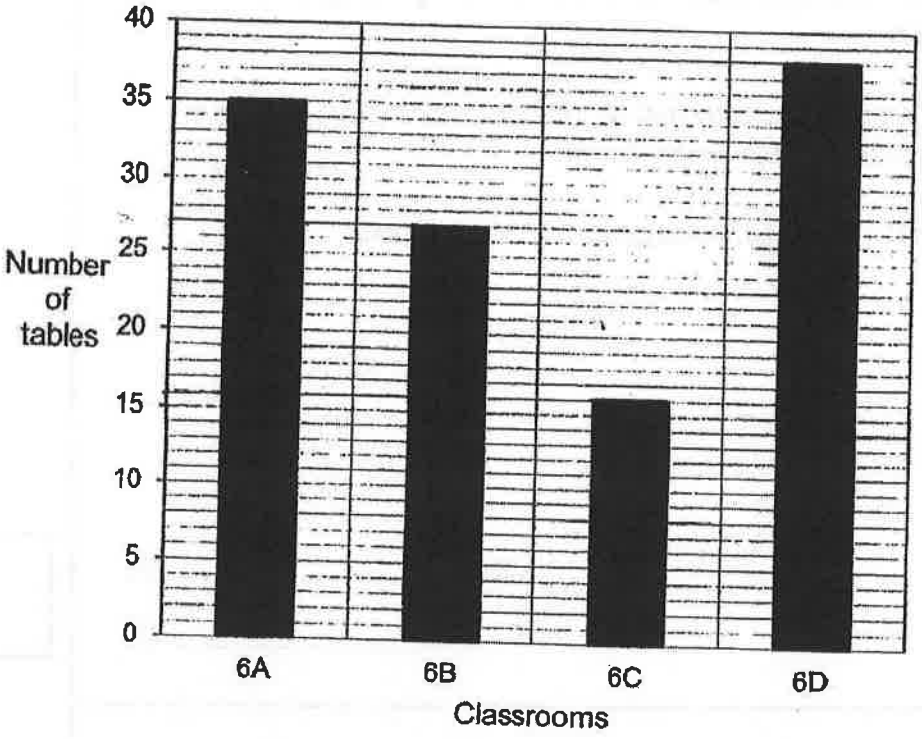

(a) There is room in each classroom for 40 tables. How many **more** tables can be added to the classrooms?

(b) 29 tables are added to the classrooms. What is the percentage increase in the number of tables?

Ans: (a) _____ [1]

(b) _____ [2]

(Go on to the next page)

Do not write in this space

9 Mrs Lee had $6m$ mangoes. She ate 2 mangoes and gave $3m$ mangoes to her sister. She then used half of the remaining mangoes to bake a mango cake.

(a) How many mangoes had Mrs Lee left? Give your answer in terms of m in the simplest form.

(b) If $m = 4$, how many mangoes had Mrs Lee left?

Ans: (a) _____ [2]

(b) _____ [1]

10 A piece of paper as shown below recorded the number of points obtained by 6 pupils in a quiz. The average number of points obtained by each pupil was 80. Parts of the points obtained by Eve and Faith could not be seen as the paper was stained accidentally. How many points did each of them, Eve and Faith, obtain?

Agnes	Becky	Carol	Diana	Eve	Faith
74	88	93	84	8[illegible]	[illegible]2

Ans: Eve : _____

Faith : _____ [3]

11 A rectangular tank measuring 0.15 m by 0.09 m by 0.2 m is filled with water up to $\frac{3}{4}$ of its height. All the water in this rectangular tank is then poured into a cubical container filling up only $\frac{3}{5}$ of the cubical container. Find the capacity of the cubical container in cubic centimetres.

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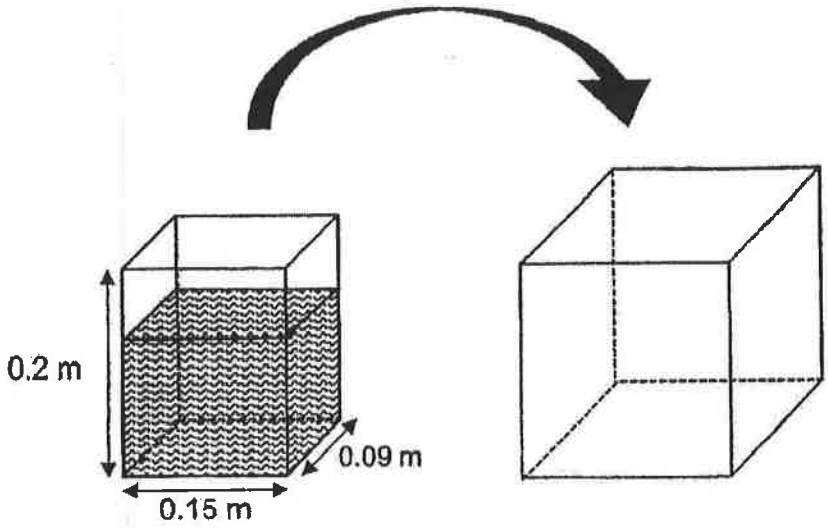


Ans: _____ [4]

12 A delivery company charges $50 for every successful delivery made without damages to the items. It will charge $5 less for any delivery with damages. Last month, the company earned $12 610. For every 20 deliveries, 6 of them were with damages. How many deliveries were made without any damages?

Do not write in this space

Ans: _____ [4]

13 Ali, Ben, Cain and Dan, shared a sum of money.

Ali has $\frac{1}{2}$ of the total amount of money that Ben, Cain and Dan have.

Ben has $\frac{1}{3}$ of the total amount of money that Ali, Cain and Dan have.

Cain has $\frac{1}{7}$ of the total amount of money that Ali, Ben and Dan have.

(a) What fraction of the total sum of money does Dan have?

(b) Dan has \$84. Find the sum of money shared by the 4 boys.

Do not write in this space

Ans: (a) _____ [2]

(b) _____ [2]

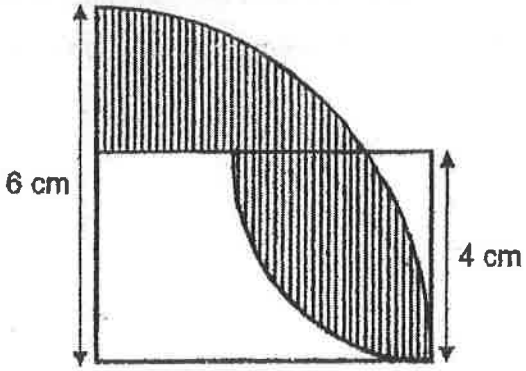
(Go on to the next page)

Do not write in this space

14 The figure below is made up of a rectangle and two different quarter circles. The radius of the big quarter circle is 6 cm and the radius of the small quarter circle is 4 cm. (Take $\pi = 3.14$)

(a) Find the perimeter of the shaded part.

(b) Find the area of the shaded part.



Ans: (a) _____ [2]

(b) _____ [2]

15 The line graphs show volume of water in Tank A and Tank B, with different capacities. At first, Tank A was completely filled with water while Tank B was half-filled with water.

A tap was turned on to drain out water from Tank A. After 20 minutes, the tap in Tank A was turned off. A tap was then turned on for 10 minutes for water to flow into Tank B at a constant rate and filling it to its brim.

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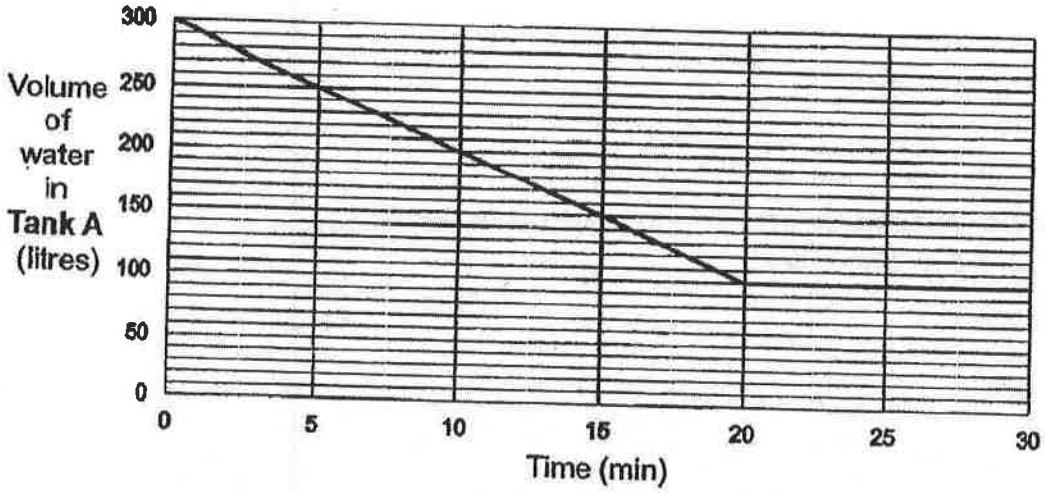

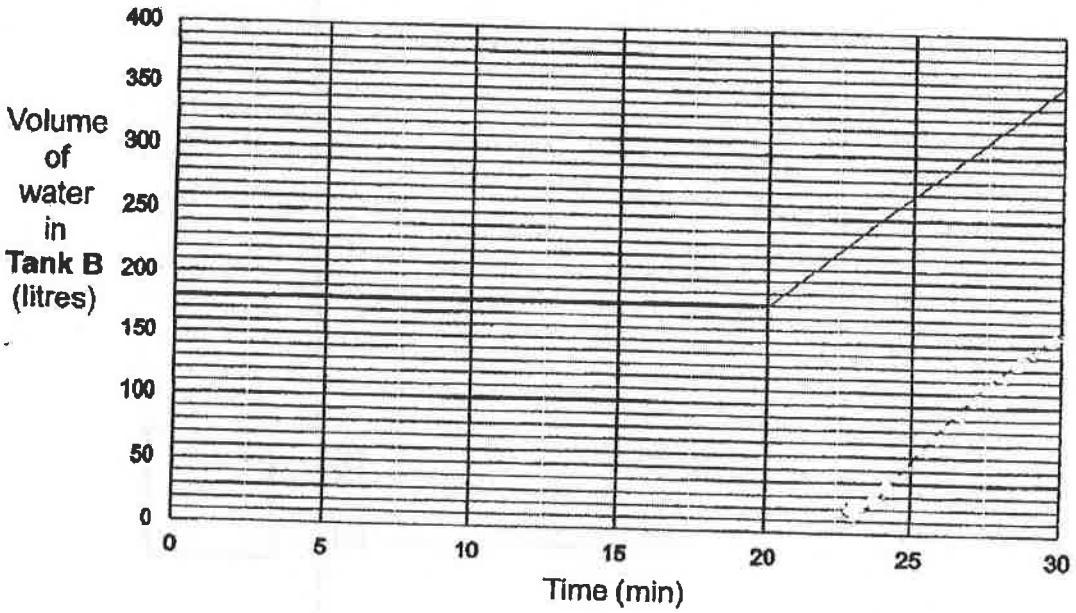

(a) Complete the line graph to show the volume of water in Tank B in the last 10 minutes. [1]

(Go on to the next page)

(b) How much water is drained from the tap in Tank A in 1 minute?

Do not write in this space

(c) How much **more** water flowed from the tap in Tank B as compared to the tap in Tank A in 10 minutes?

Ans: (b) _____ [1]

(c) _____ [2]

16 If Alice gave 22 sweets to Doris, she would have 4 times as many sweets as Doris. If Doris gave 18 sweets to Alice, she would have $\frac{1}{9}$ of the total number of sweets Alice and Doris had. Find the total number of sweets they had altogether.

Do not write in this space

Ans: _____ [5]

(Go on to the next page)

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17 An identical dress with the same usual price was sold in both Shop A and Shop B. At a sale, Shop B offered a 5% discount more than Shop A. Meiling bought the dress from Shop B and paid **$51**. The purchase saved her $3.40 more as compared to buying the dress from Shop A.

(a) What was the usual price of the dress before the discount?

(b) What was the percentage discount offered in Shop A?

Shop A	Shop B
	 Price after discount: **$51**

Ans: (a) _____ [2]

(b) _____ [3]

End of Paper

ANSWER KEY

YEAR: 2020
LEVEL: PRIMARY 6
SCHOOL: METHODIST GIRLS' SCHOOL
SUBJECT: MATH
TERM: PRELIMINARY EXAMINATION

BOOKLET A

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

BOOKLET B

Q16. 3040001

Q17.2950

Q18. ⅗=40cm
1000÷40=250÷10=25

Q19. $\frac{15min}{tank}=\frac{150}{225}=\frac{30}{45}=⅔$

Q20. 12min→600
1 min→600÷12=50

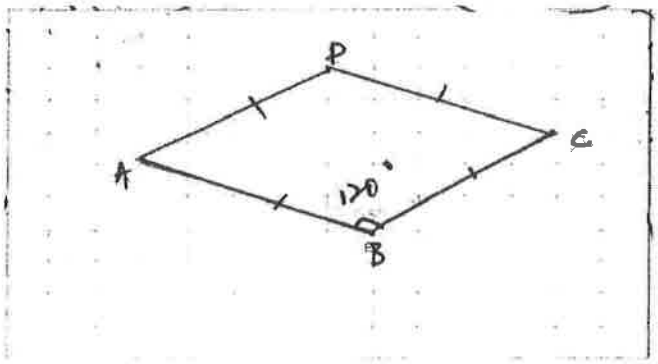
Q21. 90−50=40
40−8=32
32°

Q22. $\frac{22}{7}\times\frac{7}{1}=\frac{22}{1}=22$
$\frac{22}{7}\times\frac{4}{1}=\frac{44}{1}=44$

22+44=66
66+4=70cm

Q23. 70×4=280
360−280=80
8÷2=40
180−60−70=50

Q24.



120°

Q25. 4×4×4=64
9+1+1+3=14
64−14=50

Q26. 4.50+0.50=5.00
100÷5=20
20×0.50=$10

Q27. 2n×15=30n
30n−11

Q28. 180−88=92
92÷2=46
94−46=48

Q29. 36q=54c

6a=9c

2a=3c

4÷2=2

2×3=6

3a+6=45

54-45=9

Q30. 8+15+7=30

30÷3=10

10-6=4

ANSWER KEY

YEAR: 2020
LEVEL: PRIMARY 6
SCHOOL: METHODIST GIRLS' SCHOOL
SUBJECT: MATH
TERM: PRELIMINARY EXAMINATION
(PAPER 2)

Q1. (a)D
(b)G

Q2. 126÷45=280
2.80−0.80=2
126÷2=63−45=18
Mr Tan could buy 18 more markers

Q3.

True	False	Not possible to tell
		✔
		✔
✔		

Q4. 100%→200
90%→$\frac{200}{100}$×90=180
200+180=380
2280÷380=6h
It would take 6 hours to produce 2280 toys if both machines were used at the same time.

Q5. 60−45=15
15°

Q6. 6×6=36
3.14×3×3=28.26
36−28.26=7.74
3×3=a
7.74+9=16.74
The area of the shaded part is 16.74cm^2

Q7. 90−48=42
90−32=58
90−42=48
58−48=10°

Q8. a)35+27+16+38=126
40×4=160
160−116=44
b)$\frac{29}{116}$×100=25 %

Q9. a)6m−2−3m=3m−2
$\frac{3m-2}{2}$ =(1$\frac{1}{2}$m−1)
b)6×4=24
24−2=22
3×4=12
22−12=10
10÷2=5
a)Mrs Lee had (1½m−2) mangos left
b)Mrs Lee had 5 mangoes left

Q10. 74+88+93+84+80+2=421
80×6=480
480−421=59
Eve: 89 Faith:52

Q11. (20÷4)×3=15

15×15×9=2025

2025÷3=675

675×3375

The capacity of the cubical tank is 3375cm^3

Q12. 20×50=1000

6×5=30

1000−30=970

12610÷970=13

20−6=14

13×14=182

182 deliveries were made without damage

Q13. a)24−8−6−3=7(Dan)

$\frac{Dan}{Total}=\frac{7}{24}$

b)7u➔84

1u➔12

total➔24n

24n➔12×24=228

a)Dan has $\frac{7}{24}$

b)The 4 boys have $228 altogether.

Q14. a)¼×π×D=¼×3.14×12=9.42

¼×3.14×π=¼×3.14×8=6.28

9.42+6.28+2+2=19.7 cm

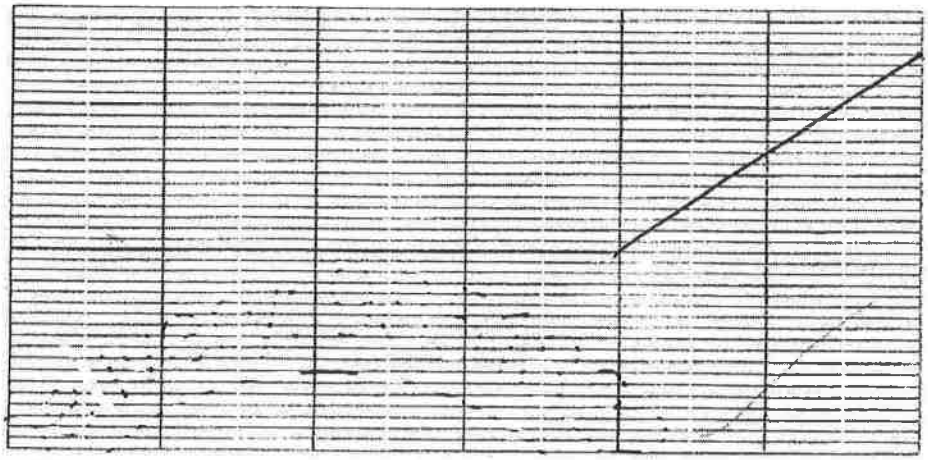
b)¼×3.14×4×4=12.56

6×4=24

24−12.56=11.44

¼×π×r×r=¼×3.14×6×6=16.82 cm^2

Q15.



b)300−100=200

200÷20=10

c)Tank B 10min➔180ι

Tank A 10min➔200÷2=100ι

80ι more of water is drained from tank B than Tank A in 10 min.

Q16. 9u=5u+5x(18+22)

9u−4u=5x40

4u=200 sweets

1u=200÷4=50

9u=9x50=450

36n+22=40u+8

22+18=40u−36u

40=4u

45u=450

Q17. a)5%➔3.40

3.40×20=68

b)51+3.40=54.40=54.40

68−54.40=13.65

$\frac{13.6}{68}$ ×100%=20%

a)The usual price of the dress before discount is $68

b)The percentage discount offered in Shop A is 20%

END.