De La Salle School | St. Anthony's Primary | St. Joseph's Institution Junior | St. Stephen's School

# CHRISTIAN BROTHERS' SCHOOLS

## PRELIMINARY EXAMINATION

## 2015

## PRIMARY 6

## MATHEMATICS

## PAPER 1

## (BOOKLET A)

NAME: _____

CLASS: _____

**15 Questions**
**20 Marks**

**Total Time for Booklets A and B : 50 min**

Instructions to candidates

- Do not open this booklet until you are told to do so.
- Follow all instructions given at the beginning of each section carefully.
- An Optical Answer Sheet is provided for answers to Questions 1 to 15.
- Do not waste time. If a question is difficult, go on to the next one.
- Answer all questions.
- You are **not** allowed to use a calculator.

This booklet consists of _7_ printed pages.

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 oval (1, 2, 3 or 4) on the Optical Answer Sheet. [20 marks]

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1. Round off 58.256 to the nearest tenth.

   (1) 58

   (2) 58.2

   (3) 58.3

   (4) 58.26

2. Which one of the following has the same value as $1\frac{3}{4}$?

   (1) $1 \times \frac{3}{4}$

   (2) $7 \times \frac{1}{4}$

   (3) $1 \div \frac{3}{4}$

   (4) $\frac{3}{4} \div \frac{1}{4}$

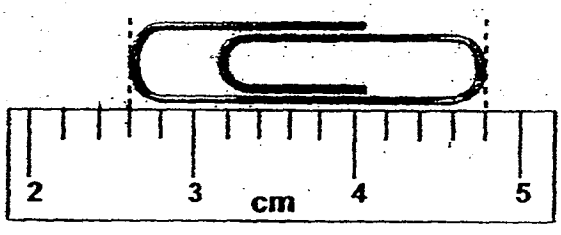
3. What is the length of the paper clip in the figure below?

   (1) 2.2 cm

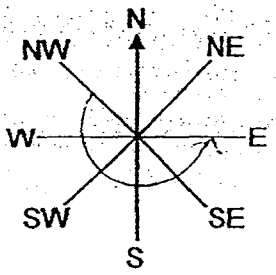
   (2) 2.4 cm

   (3) 4.4 cm

   (4) 4.8 cm



4. The figure below shows an 8-point compass. John was facing north-west at first. He then turned 225° anti-clockwise. Which direction is he facing now?




(1) North (N)

(2) South (S)

(3) East (E)

(4) West (W)

5. Express 12 km 80 m in metres.

(1) 12.8 m

(2) 1280 m

(3) 12 080 m

(4) 12 800 m

6. Which of the following fractions is closest to 2?

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

(2) $1\frac{5}{6}$

(3) $2\frac{1}{5}$

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

7. Simplify $11m + 10 - 5m - 5 + 2m$.

(1) $8m - 5$

(2) $8m + 5$

(3) $18m + 5$

(4) $4m + 5$

8. Cheryl and Kenny shared some marbles. Cheryl had $\frac{2}{5}$ the number of marbles Kenny had. What was the ratio of the number of marbles Cheryl had to the number of marbles Kenny had to the total number of marbles they had?

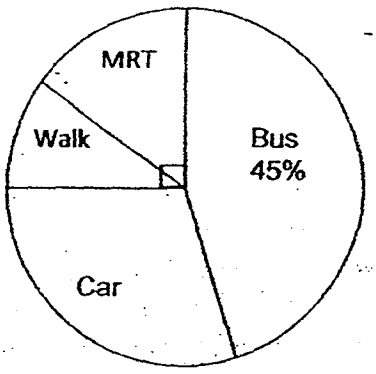
(1) 2 : 3 : 5

(2) 2 : 5 : 7

(3) 5 : 2 : 7

(4) 7 : 5 : 2

9. The pie chart below shows the various modes of transportation used by a group of pupils to go to school every day. What percentage of the pupils go to school by car?




(1) 20%

(2) 25%

(3) 30%

(4) 35%

10. The distance around a running track is 400 m. Ali took 10 minutes to walk around the running track twice. What was Ali's average walking speed?

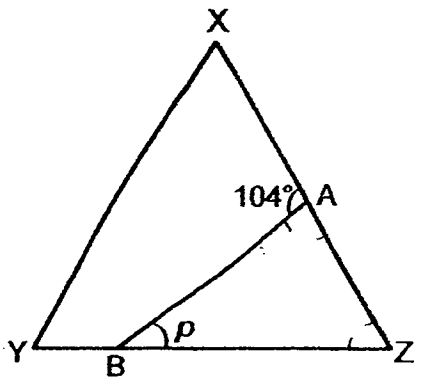
(1) 0.025 m/min

(2) 0.05 m/min

(3) 40 m/min

(4) 80 m/min

11. The figure below shows an equilateral triangle XYZ and a straight line AB. Find $\angle p$.




(1) 28°

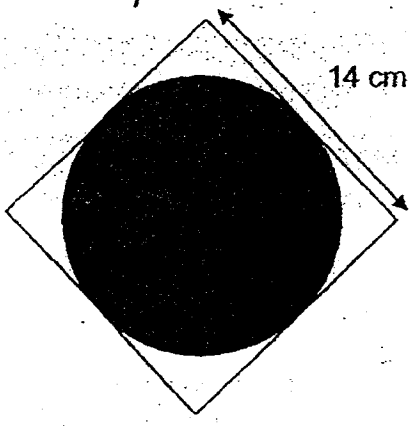
(2) 44°

(3) 60°

(4) 76°

12. The figure shows a circle inside a square. Find the area of the **unshaded** part.

(Take $\pi = \frac{22}{7}$)




(1) 42 $cm^2$

(2) 44 $cm^2$

(3) 152 $cm^2$

(4) 154 $cm^2$

13. Mrs Lee had $1\frac{1}{6}$ kg of sugar. She bought another $\frac{3}{4}$ kg of sugar. She packed all the sugar equally into bags of $\frac{1}{12}$ kg each. How many bags of sugar did she have?

(1) 5

(2) 2

(3) 11

(4) 23

14. A rectangular tank was half-filled with water. When 4.5 $\ell$ of water was added, it became $\frac{4}{5}$ full. What was the height of the tank if its base area was 500 $cm^2$?

(1) 9 cm

(2) 24 cm

(3) 3 cm

(4) 30 cm

15. There was a group of 80 pupils in the hall. 40% of them were girls. When some more girls joined the group, the percentage of boys decreased to 20%. How many pupils were there in the end?

(1) 96

(2) 160

(3) 192

(4) 240

**End of Booklet A**

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# CHRISTIAN BROTHERS' SCHOOLS

## PRELIMINARY EXAMINATION

## 2015

## PRIMARY 6

## MATHEMATICS

## PAPER 1

## (BOOKLET B)

NAME: _____

CLASS: _____

**15 Questions** **Total Time for Booklets A and B : 50 min**
**20 Marks**

Instructions to candidates

- Do not open this booklet until you are told to do so.
- Follow all instructions given at the beginning of each section carefully.
- Answer all questions.
- Do not waste time. If a question is difficult, go on to the next one.
- Write your answers in this booklet.
- You are **not** allowed to use a calculator.

| BOOKLET | MARKS | |
|---|---|---|
| | POSSIBLE | ACTUAL |
| A | 20 | |
| B | 20 | |
| TOTAL | 40 | |

This booklet consists of 7 printed pages.

Questions **16** to **25** carry 1 mark each. Write your answers in the spaces provided. For questions which require units, give your answers in the units stated. (10 marks)

16. Use all the digits below to form the **smallest** multiple of 5.

**6, 7, 3, 0, 5**

Ans : _____

17. Find the value of $6 \div \frac{3}{11}$.

Ans : _____

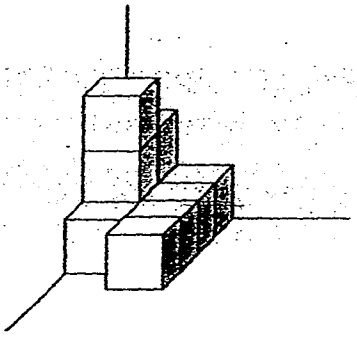
18. Find the value of $0.609 \times 80$.

Ans : _____

19. Jane is standing in a queue. She is the $4^{th}$ person from the front and the $17^{th}$ person from the back. How many people are there in the queue?

Ans : _____

20. The solid below is made up of 1-cm cubes. What is the volume of the solid?



Ans : _____ $cm^3$

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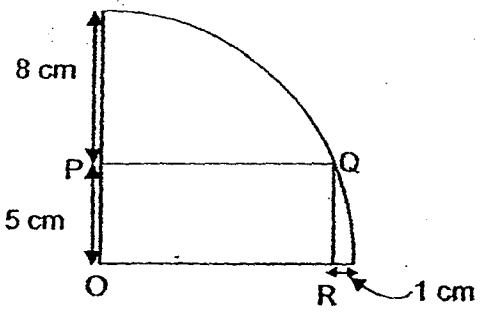
21. The figure below is made up of a quadrant and a rectangle, OPQR. Find the perimeter of rectangle OPQR.




Ans : _____ cm

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22. Tim spent 50 minutes doing his homework before he took a 30-minute break. He then continued with his homework and completed it 30 minutes later. At what time did he start doing his homework if he completed his homework at 18 30? Express your answer using the 24-hour clock.

Ans : _____

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23. The total height of 4 children is 546 cm. One of the children is 150 cm tall. What is the average height of the other 3 children?

Ans : _____ cm

---

24. There are 40 members in a sailing club. There are 8 more male members than female members. What percentage of the members are female?

Ans : _____ %

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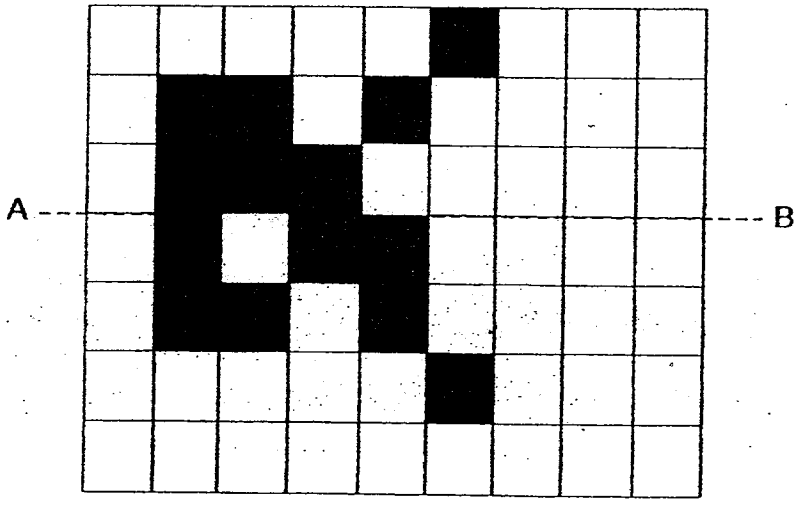
25. The figure below shows 14 shaded squares. Shade 2 more squares to complete the figure so that the dotted line AB is a line of symmetry.

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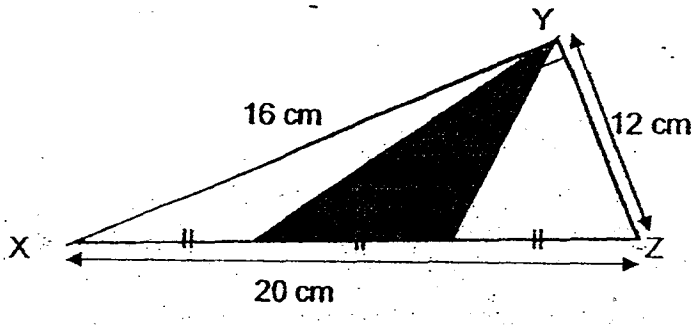
Questions **26** to **30** carry 2 marks each. Show your working clearly in the space provided for each question and write your answers in the spaces provided. For questions which require units, give your answers in the units stated. (10 marks)

26. There are some cows and goats on a farm. $\frac{1}{5}$ of the number of cows is equal to $\frac{5}{8}$ of the number of goats. There are 34 more cows than goats. How many goats are there on the farm?

Ans : _____

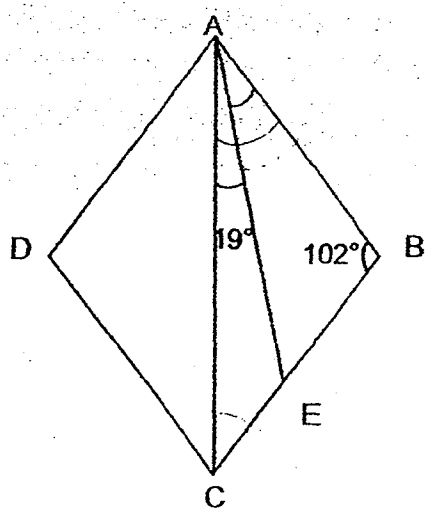
27. In the figure below, XYZ is a right-angled triangle. Find the shaded area.




Ans : _____ $cm^2$

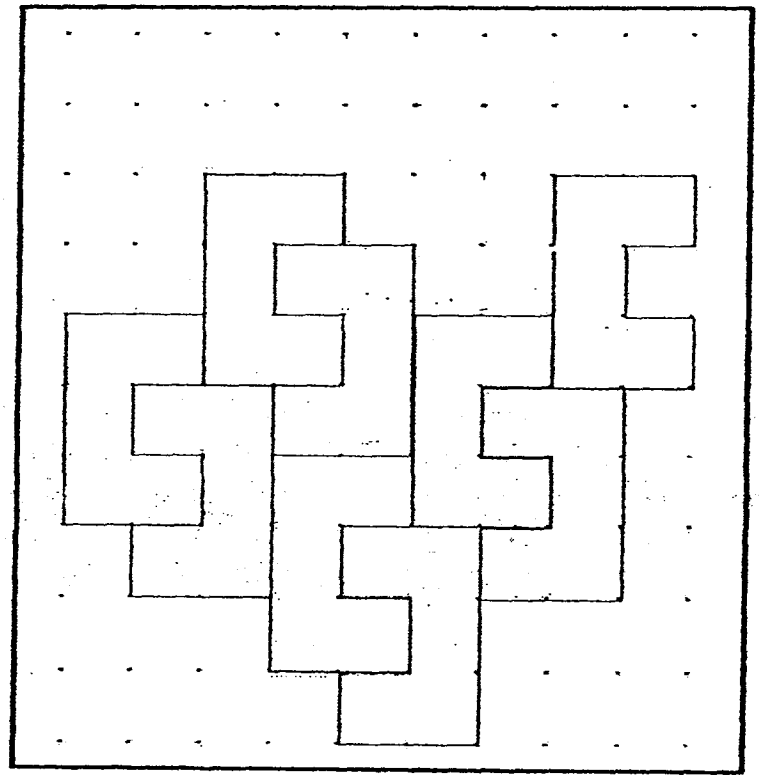
28. In the figure below, ABCD is a rhombus. $\angle ABC = 102°$ and $\angle CAE = 19°$.

Find $\angle EAB$.




Ans : _____ °

29. The pattern in the box below shows part of a tessellation. Extend the tessellation by drawing **two** more unit shapes in the space provided within the box.



30. The table below shows the registration fee for the various categories in a running competition.

| Category | Registration fee per person |
|---|---|
| Kids' Dash | ? |
| 5-km Run | $50 |
| 10-km Run | $60 |

Mr Tan and his family participated in the competition. He and his wife participated in the 10-km and 5-km Run respectively. His two children participated in the Kids' Dash. How much did Mr Tan pay for each child if the average cost of registration for his family was $42.50?

Ans : $_____

**End of Paper**

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# CHRISTIAN BROTHERS' SCHOOLS

## PRELIMINARY EXAMINATION

## 2015

## PRIMARY 6

## MATHEMATICS

## PAPER 2

NAME: _____ (  )

CLASS: St _____ 6

**18 Questions** **Time : 1 h 40 min**

**60 Marks**

Instructions to candidates

- Do not open this booklet until you are told to do so.
- Follow all instructions given at the beginning of each section carefully.
- Show all working clearly as marks are awarded for correct working.
- Answer all questions.
- Do not waste time. If a question is difficult, go on to the next one.
- Write your answers in this booklet.
- You are allowed to use a calculator.

| BOOKLET | MARKS | |
|---|---|---|
| | POSSIBLE | ACTUAL |
| PAPER 1 | 40 | |
| PAPER 2 | 60 | |
| TOTAL | 100 | |

**PARENT'S SIGNATURE:**

This booklet consists of 15 printed pages.

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)

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1.

**Cupcakes Promotion**

**All cupcakes at $2 each**

**Buy 8 and get 1 free!**

Janie paid $80 for some cupcakes. How many cupcakes did she get?

Ans: _____

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2. Mrs Lee had a bottle of oil. She used an equal amount of oil each day. At the end of the 8th day, she had $\frac{1}{4}$ of the oil left. At the end of the 10th day, she had 110 mℓ of oil left. What was the amount of oil in the bottle at first?

Ans: _____ mℓ

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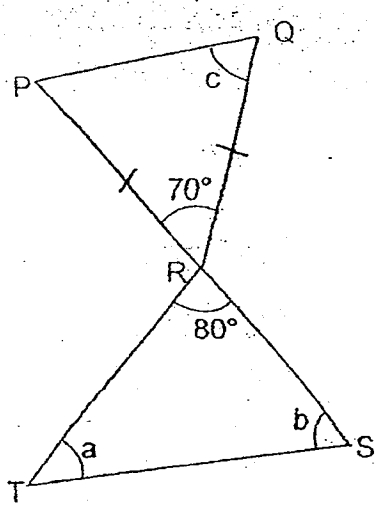
3. The figure below is not drawn to scale. PQR is an isosceles triangle. PRS is a straight line. ∠PRQ = 70° and ∠TRS = 80°. Find the sum of ∠a, ∠b and ∠c.




Ans: _____ °

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4. The ratio of the amount of money Alice had to the amount of money Bobby had was 9 : 16. After Alice gave $8 to Bobby, the ratio of the amount of money she had to the amount of money Bobby had was 1 : 4. How much did Alice have at first?

Ans: $ _____

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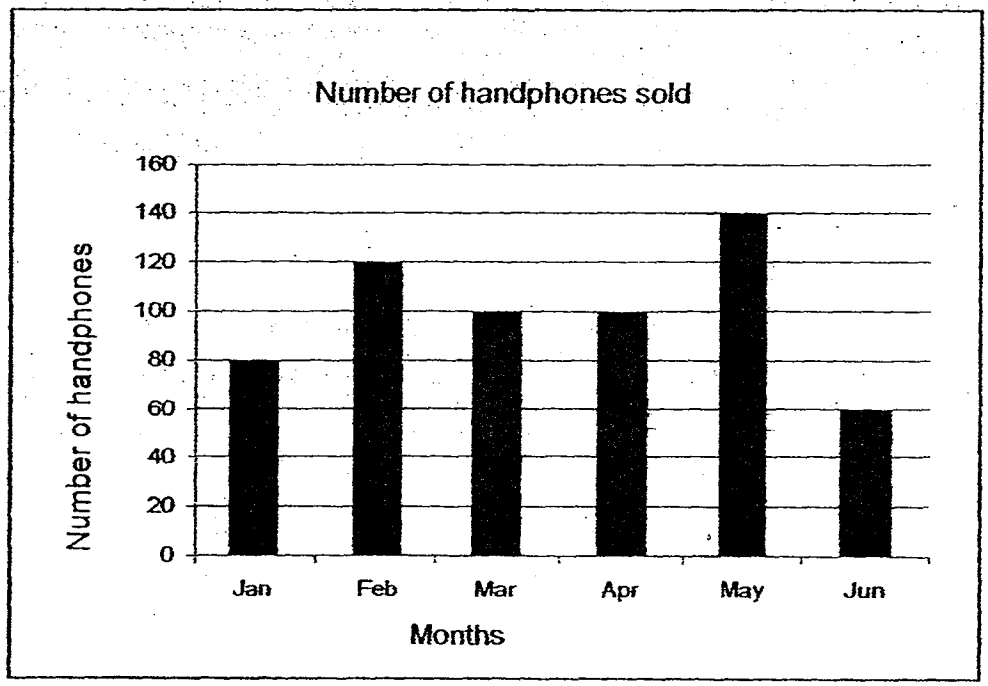
5. The bar graph below shows the number of handphones sold over a 6-month period in a shop.




In which month did the shop sell 20% of the total number of handphones?

Ans: _____

For questions **6** to **18**, show your working clearly in the space provided for each question and write your answers in the spaces provided. The number of marks available is shown in brackets [ ] at the end of each question or part-question. (50 marks)

6. The total age of Linda, Patrick and Don is $15p$ years. Linda is 3 years old. Patrick is three times as old as Don.

   (a) Express Don's age in terms of $p$.

   (b) If $p = 5$, how old is Patrick?

Ans: (a)_____ [1]

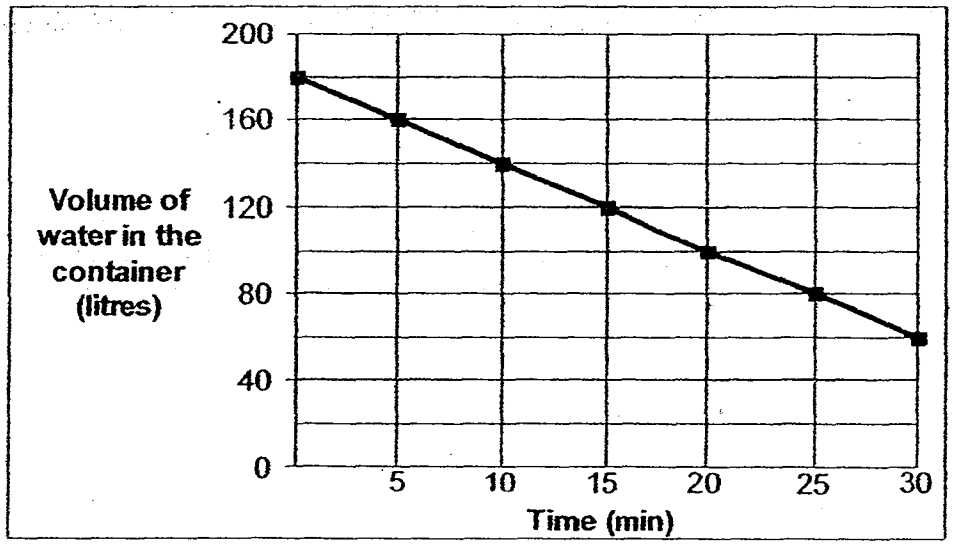
(b)_____ [2]

7. A wall needs to be painted. Worker A alone takes 8 hours and Worker B alone takes 12 hours to paint the whole wall. If both workers paint the wall together for 3 hours, what fraction of the wall will be painted? Leave your answer in its simplest form.

Ans: _____ [3]

8. A container was completely filled with water. Some water in the container was drained using a tap at the bottom of the container. After 30 minutes, the tap was then turned off.

The line graph shows the volume of water in the container over 30 minutes.




(a) How many litres of water flowed out of the container in one minute?

(b) The tap was turned on again to drain water from the container at the same rate as before. How many more minutes did it take for the container to be empty?

Ans: (a)_____ [1]

(b) _____ [2]

9. A van left Town A for Town B at 10 00 and travelled at an average speed of 55 km/h. At 13 00, a car left Town A for Town B. If the car took 2 h to catch up with the van, find the average speed of the car.

Ans: _____ [3]

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10. Sophia gets $5 pocket money every day of the week. She spends $3.20 every day from Monday to Friday and saves the rest. She spends $4 a day on Saturdays and Sundays and saves the rest. How many days does Sophia take to save $47.60 if she starts saving on a Monday?

Ans: _____ [3]

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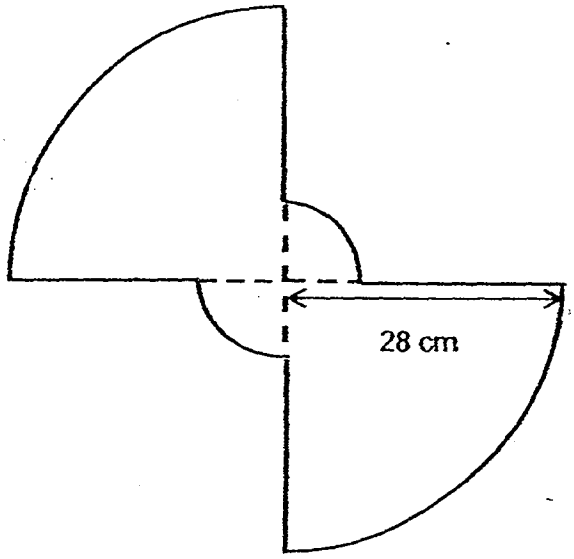
11. The figure is made up of two identical big quadrants and two identical small quadrants. The ratio of the radius of the small quadrant to the radius of the big quadrant is 1: 4. The radius of the big quadrant is 28 cm.

Find the perimeter of the figure.

(Take $\pi = \frac{22}{7}$)



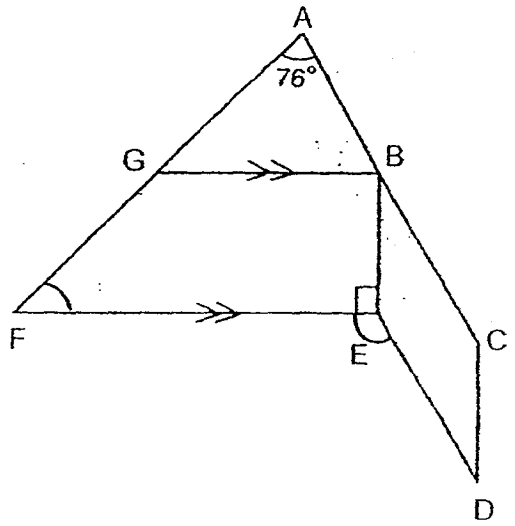

Ans: _____ [4]

12. In the figure below, GBEF is a trapezium and BCDE is a parallelogram.

ABC and AGF are straight lines. ∠BED is five times of ∠CBE. ∠FEB is a right angle and ∠FAB = 76°.

(a) Find ∠FED.

(b) Find ∠AFE.




Ans: (a) _____ [2]

(b) _____ [2]

13. $\frac{1}{6}$ of the people in a hall are girls. The number of boys is $\frac{2}{3}$ of the number of girls. The number of boys is $\frac{1}{4}$ of the number of men. There are 112 more women than girls. How many people are there in the hall?

Ans: _____ [4]

14. Mr Raja bought a computer for $1512 after a discount of 30%. He also bought a printer at a discounted price of $255 . The total discount for the computer and the printer was $693.

(a) What was the price of the computer before the discount?

(b) What was the percentage discount given for the printer?

Ans: (a)_____ [2]

(b)_____ [2]

15. At first, Samy, Meili and Gary shared some postcards in the ratio 15 : 8 : 5.

Samy gave $\frac{1}{5}$ of his postcards to Gary while Meili gave 40% of hers to Gary.

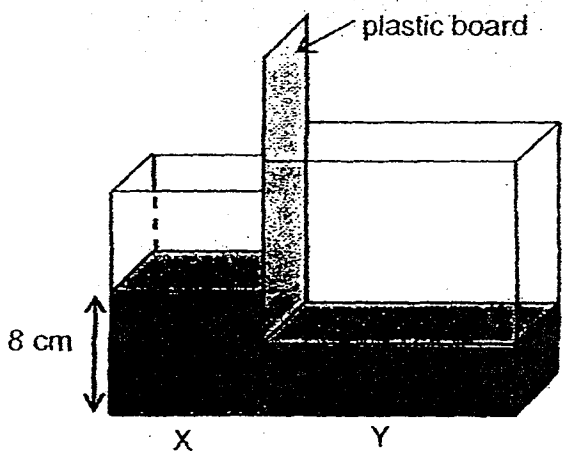
Gary also received 190 postcards from his brother. The number of postcards Gary had in the end was three times what he had at first. How many postcards did Samy and Meili have altogether at first?

Ans: _____ [4]

16. A shopkeeper sold four times as many water bottles as bags. The total amount he collected was $4056. He collected $936 more from the sale of the water bottles than from the sale of the bags. A water bottle cost $18 less than a bag.
Find the cost of a bag.

Ans: _____ [5]

17. The container below is made up of two rectangular tanks, X and Y. They are divided by a plastic board. The base area of tank X is 1400 $cm^2$ and it contains water up to a height of 8 cm. The base area of tank Y is 1600 $cm^2$ and it contains 8000 $cm^3$ of water.




(a) What was the height of the water in tank Y at first?

(b) Joan then removed the plastic board completely. What is the height of the water in the container in the end?

Ans: (a)_____ [1]

(b)_____ [4]

18. Tom used some banners and flags to decorate the school hall. He used two strings of the same length. He cut the string into equal parts of length 80 cm and to each part he tied two banners as shown in **Figure 1**.

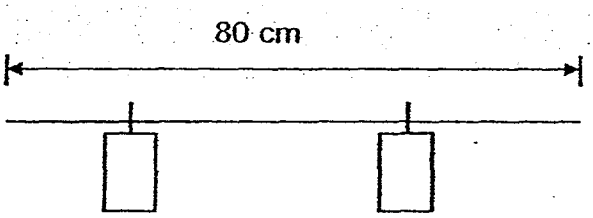



**Figure 1**

After that, he cut the other string into equal lengths of 1.2 m and to each part he tied small flags as shown in **Figure 2**.

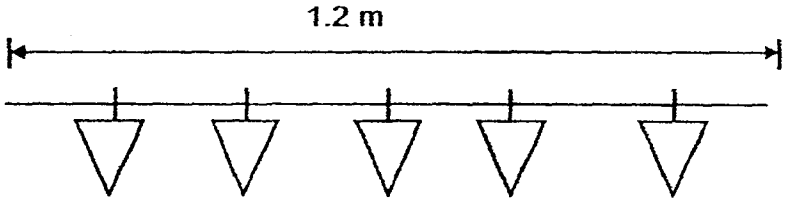



**Figure 2**

When he finished decorating, he counted 44 more flags than banners.
How many banners were there?

Ans: _____ [5]

**END OF PAPER**

**EXAM PAPER 2015**
**LEVEL : PRIMARY 6**
**SCHOOL : CHRISTIAN BROTHERS' SCHOOL**
***SUBJECT* : MATHS**
**TERM : PRELIMINARY EXAMINATION**

**PAPER ONE**

| Q 1 | Q 2 | Q 3 | Q 4 | Q 5 | Q 6 | Q 7 | Q 8 | Q9 | Q 10 |
|---|---|---|---|---|---|---|---|---|---|
| 3 | 2 | 1 | 3 | 3 | 2 | 2 | 2 | 3 | 4 |
| Q 11 | Q 12 | Q 13 | Q 14 | Q 15 | | | | | |
| 2 | 1 | 4 | 4 | 4 | | | | | |

Q16. 30675 Q17. 22 → $6 \div \frac{3}{11} = 6 \times \frac{11}{3} = 22$ Q18. 48.72 Q19. 20 → 16 + 4 = 20

Q20. $10cm^3$ → 1 x 1 x 1 = 1 , 1 x 10 = 10

Q21. 34cm → 8 + 5 – 1 = 12, 12 x 2 = 24, 5 x 2 = 10, 24 + 10 = 34

Q22. 1640 →

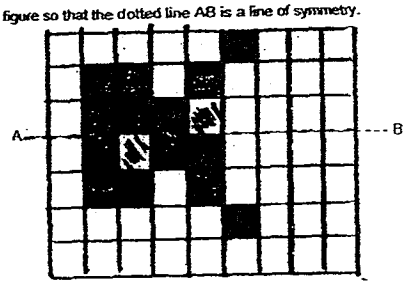
| 20 min | 30 min | 30 min | 30min |
|---|---|---|---|
| 1640 | 1700 | 1730 | 1830 |

Q23. 132cm → 546 – 150 = 396, 396 ÷ 3 = 132

Q24. 40% → 40 – 8 = 32, 32 ÷ 2 = 16, $\frac{16}{40} \times 100 = \frac{160}{4} = 4$

Q25. SEE PICTURE

25. The figure below shows 14 shaded squares. Shade 2 more squares to complete the figure so that the dotted line AB is a line of symmetry.



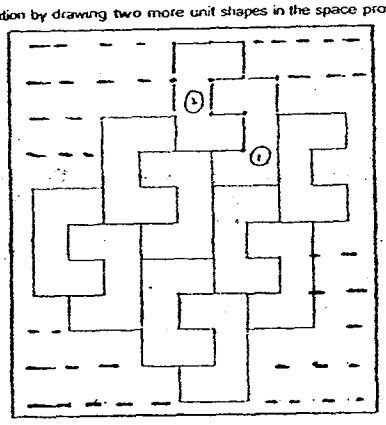

Q26. 16 → 5 x 5=25, 25–8 = 17, 34÷17=2, 2 x 8 = 16

Q27. $32cm^2$ → $\frac{1}{2} \times 12 \times 16 = 96, 96 \div 3 = 32$

Q28. 20° → 180°– 102° = 78°, 78° ÷ 2 = 39°, 39°–19° = 20°

Q29. SEE PICTURE

29. The pattern in the box below shows part of a tessellation. Extend the tessellation by drawing two more unit shapes in the space provided within the box.



Q30. $30. → 42.50 X 4 = 170, 60 + 50 = 110, 170 - 110 = 60, 60÷ 2 = 3

## PAPER TWO

Q1. 45 → No. of $2 cupcakes → 80 ÷ 2 =40, FREE → 40 ÷ 8 = 5, Total → 40 + 5 = 45
Q2. 1760ml → 1U → 110 ÷ 2 = 55, No. of units → 8 x 4 = 32, 32U → 32 x 55 = 1760
Q3. 155° → $\angle C$ → 180° − 70° ÷ 2 = 55°, $\angle A + \angle B$ → 180° − 80° = 100°, *Total* → 100° + 55° = 155°
Q4. $18 → 20−16 = 4, 9−5 = 4, 1U → 8 ÷4 =2, 9U → 2 x 9 = 18
Q5. February → Total → 80 + 120 + 100+100+140=60=600, 20% → 600 x $\frac{20}{100}$ = 120
Q6.a. $(\frac{15p-3}{4})$ *years old.* → *Don* → $(15p - 3) \div 4 = (\frac{15p-3}{4})$
Q6b. 54 years old → P → ( 15 x 5 -3 ) ÷ 4 x 3 = 54
Q7. $\frac{5}{8}$ → (A) 1h → $\frac{1}{8}$, ( A) 3h → $\frac{3}{8}$, ( *B*) → 1*H* → $\frac{1}{12}$, (*B*) 3*H* → $\frac{3}{12}$, 3H → $\frac{3}{8} + \frac{3}{12} = \frac{5}{8}$
Q8.a. 4litre ,8b. 15min → litres of water flown out → 180 − 60 = 120, 1 min → 120÷30 = 4, (remain ) Minutes → 60÷4 = 15.

Q9.137.5km/h → (V)D → 55 x 5 = 275, (C)S → 275 ÷ 2 = 137.5

Q10. 30 → M to F → 5 x 5= 25; (M→F)S →25 - (3.20 x 5 ) = 9, Sat to Sun →5x2 = 10, (Sat →Sun)S → 10-(4 x 2 ) = 2 , Savings per week →2+9=11, sets→47.6÷11=4R3.60, Remain→3.60−3.20=0.40, 4 x7 = 28, 28 + 2 = 30

Q11. 194cm → 2 x small *quadrants* → $\frac{1}{2}$ *x* (7 + 7)*x* $\frac{22}{7}$ = 22 , 2 *x big quadrants* → $\frac{1}{2}$ *x* (28 + 28)*x* $\frac{22}{7}$ = 88, 28 − 7 = 21, 4 *sides* → 21 *X* 4 = 84, *Total* →22 + 88 + 84 = 194.

Q12.a. 120° → $\angle CBE$ →180° ÷ 6 = 30°, $\angle BED$ → 30° *x* 5 = 150°, $\angle FED$ → 360° − 150° − 90° = 120°
Q12b. 44° → $\angle ABG$ →180° − 90° − 30° = 60°, $\angle AGB$ →180° − 76° − 60° = 44°, $\angle BGF$ →180° − 44°= 136°, $\angle AFE$ →180°−136°=44°

Q13.1088→ 1U → 112÷2=56, 3 x 6 =18, 18U → 56 x 18 = 1008

Q14a. $2160→ (C) 10% → 1512÷7=216, (C)100%→216x10=2160
Q14b. 15% →(C) Discount → 2160 x $\frac{30}{100}$ = 648, (P) → Discounts → 693 - 648=45, (P) Original →45 + 255 = 300, (P) percent discount → $\frac{45}{300}$ *x* 100 = 15

Q15. 1150→ 150-112= 38, 1U → 190÷38=5, (At first ) S + M → 150+80= 230, 230U →230 x 5 = 1150

Q16. $30 → (4056 +936) ÷ 2 = 2496, 2496 - 936 = 1560, 2496 ÷ 4 = 624, 1560 - 624 = 936, 936÷18=52, 1560÷52=30.

Q17a. 5cm Q17b. 6.4cm → (Y) *H* → 8000 ÷ 1600=5, (X) *water* → 8 X 1400 =11200, Total→11200 +8000=19200, Total → 1400+1600= 3000 base area, H→19200÷3000=6.4

Q18. 66 → 120cm and 80cm first common multiple →240, 2 strings →5 X 2 = 10, 3 strings →2 x 3 = 6, Difference → 10−6=4, sets→44÷4=11, B→6x11=66

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