Name: _____ (   )   26 August 2009

Class: P 6_

CATHOLIC HIGH SCHOOL

PRIMARY SIX

PRELIMINARY EXAMINATION 3

MATHEMATICS

PAPER 1

(BOOKLET A)

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 carefully.

Shade your answers in the Optical Answer Sheet (OAS) provided.

You are not allowed to use a calculator.

Answer all questions.

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 on the Optical Answer
Sheet. All diagrams are not drawn to scale. (20 marks)

1. What is the biggest whole number that gives 159 000 when rounded off
    to the nearest thousand?

    (1)   149 999
    (2)   159 499
    (3)   159 999
    (4)   160 000

2. 2 050 m is the same as _____ km.

    (1)   0.205 km
    (2)   2.050 km
    (3)   20.5 km
    (4)   205 km

3. Which of the following has the same expression as $\dfrac{1}{2}$ $\dfrac{1}{3}$?

    (1)   1 : 1
    (2)   2 : 3
    (3)   3 : 2
    (4)   5 : 6

4. What is the result when 12 hundredths is removed from 12 tenths?

    (1)   0.0108
    (2)   0.108
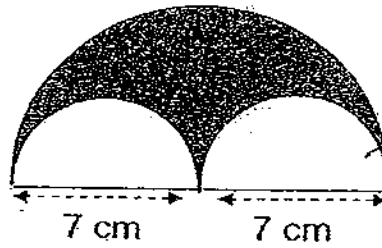   (3)   1.08
    (4)   10.8

(Go to the next page)

1

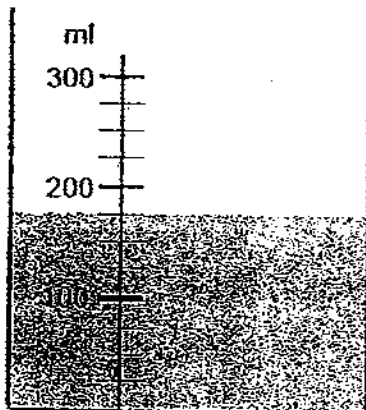5. What fraction of the figure is shaded?

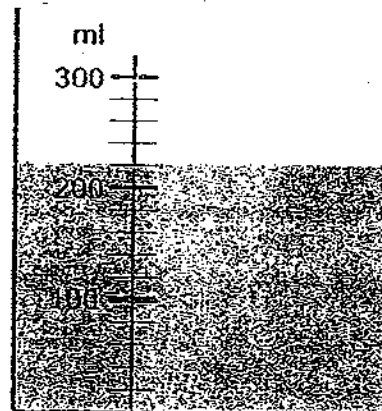(1) $\frac{1}{2}$

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

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

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

7 cm   7 cm

6. What is the difference in the amount of water between Container A and B?

ml
300
200

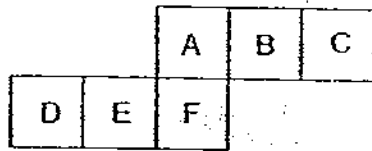Container A

ml
300
200
100

Container B

(1) 40 ml

(2) 45 ml

(3) 50 ml

(4) 70 ml

(Go to the next page)

2

7. The figure shows the net of a cube.

Which 2 faces lie opposite each other?

(1) A and D

(2) B and D

(3) B and E

(4) C and F

8. 4 men took 3 hours to paint a house. If two more men joined them right from the start, how many hours will it take them to paint the same house?

(1) $1\frac{1}{2}$ h

(2) 2 h

(3) $2\frac{2}{3}$ h

(4) 6 h

9. Express 24 g as a percentage of 2.4 kg.

(1) 1%

(2) 0.1%

(3) 10%

(4) 100%

10. John walked from his home to the park at an average speed of 3km/h for 20 minutes. He continued his journey from the park to school by running at an average speed of 6km/h. If the total distance from his home to school via the park was 2 500 m, how long did John take for the total journey?

    (1)   20 min
    (2)   35 min
    (3)   55 min
    (4)   60 min

11. Mr Tan spent $\frac{1}{4}$ of his salary and another $400 to pay the bills. Out of the remainder, he gave another 60% to his wife and $40 to each of his 2 children. If he was left with $720 for himself, how much was his salary?

    (1) $800
    (2) $2 000
    (3) $3 200
    (4) $4 800

12. The figure below is made up of a rhombus ABDE and a triangle BCD. CDE is a straight line and the ratio of angle y to angle x is 3:2. Find $\angle x$.
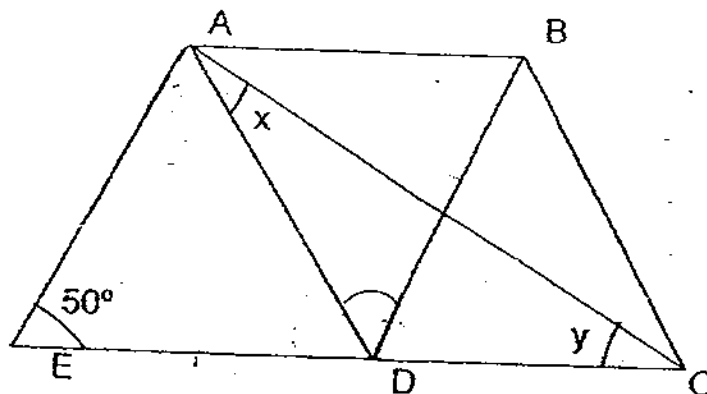
    (1)   13°
    (2)   26°
    (3)   39°
   (4)   65°

(Go to the next page)

4

13. A basket contained some apples and oranges. After 30 oranges were added into the basket, the percentage of oranges increased from 40% to 60%. How many apples were there in the basket?

   (1)   30
   (2)   36
   (3)   60·
   (4)   90

14. What is the value of $200 \div (8 + 2) \times 2 - 3 + 5$?

   (1)   12
   (2)   2
   (3)   15
   (4)   42

15. The pie chart shows how Mr Tan divided his salary for the month of May. The amount of money he gave his two sons is $\frac{1}{4}$ of the amount he gave to his wife. The amount of money Mr Tan spent on transport is the same as his savings. The total amount of money he gave to his wife and spent on TV set is $\frac{1}{2}$ of his salary. How much money did he save for the month of May?
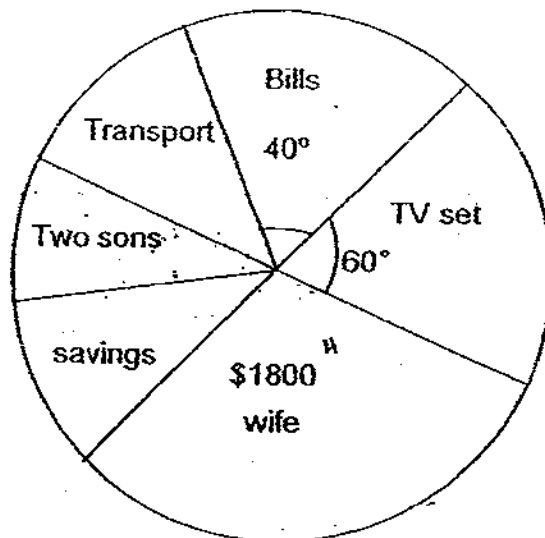
   (1) $450
   (2) $600
   (3) $900
   (4) $1200

Name:_____ (   )   26 August 2009

Class: P 6_____

CATHOLIC HIGH SCHOOL

PRIMARY SIX

PRELIMINARY EXAMINATION 3

MATHEMATICS

PAPER 1

(BOOKLET B)

15 questions

20 marks

Total Time for Booklets A and B: 50 min

Booklet A	
Booklet B	
Total	

INSTRUCTIONS TO CANDIDATES

Do not turn over this page until you are told to do so.

Follow all instructions carefully.

Answer all questions.

Show your working clearly as marks are awarded for correct working.

Write your answers in this booklet.

You are **not** allowed to use a calculator.

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

16. A man, who was facing northeast, turned 135° clockwise. Which direction would he be facing?

Ans:_____

17. A man bought 4 files and gave $50 to the cashier. He received $y as change. Find the cost of each file in terms of y.

Ans: $_____

18. Find the value of $\frac{1}{2} \times \frac{2}{3} \times \frac{3}{4} \times \frac{4}{5} \times ... \times \frac{196}{197} \times \frac{197}{198} \times \frac{198}{199} \times \frac{199}{200}$.

Ans: _____

19. The table below shows the parking charges at ABC shopping complex.

First hour	$1.60
Every additional 15 min or part thereof	$0.50

How much must Mr Lim pay if he intends to park his car at this car park from 11.25 a.m. to 1.10 p.m.?

Ans: $_____

(Go to the next page)

6

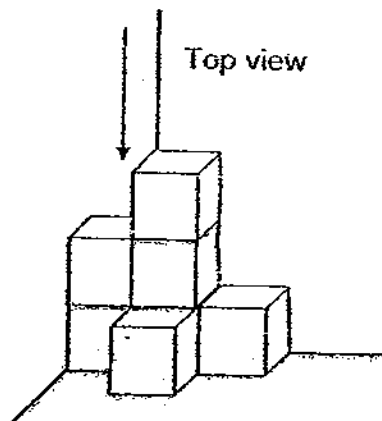20. Express $\dfrac{5}{8}$ as a decimal correct to 2 decimal places.

Ans: _____

21. Express 0.025 as a percentage.

Ans: _____ %

22. The figure below is made up of identical cubes. In the grid provided, shade the relevant squares to show the top view of the figure.

Top view

(Go to the next page)

7

23. $\dfrac{4}{5}$ of Alan's marbles is the same as $\dfrac{3}{5}$ of Ben's marbles. Find the ratio of Ben's marbles to the total number of marbles of Alan and Ben.

Ans: _____

24. Fill in the blank in the statement below.

$0.7 : \dfrac{7}{8} = \text{\_\_\_} : \text{\_\_\_\_}$

$0.7 : \dfrac{7}{6} = 1^{?}$

Ans: _____

25. Howard has 145 sweets and Joseph has 35 sweets. How many sweets does Howard need to give Joseph so that Howard will have twice as many sweets as Joseph?

Ans: _____

Total marks for questions 16 to 25
(Go to the next page)

8

Questions 26 to 30 carry 2 marks each. Show your working clearly in the space below 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. The figure below is made up of 2 triangles ABC and ABD. Given that the shaded area is 18 cm^2, what is the length of AB?

D

3

7 cm

4 cm

A   B
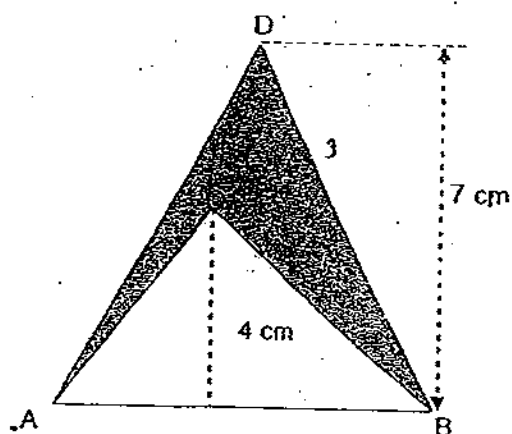
Ans: _____ cm

27. Construct a parallelogram ABCD given that AB = 9 cm, BC = 5 cm and ∠BAD = 80°.

A   B

(Go to the next page)

28. Mary has enough money to buy 20 apples. If the price of each apple is reduced by 10 cents, she will be able to buy an extra 5 apples with the same sum of money. Find the original cost of each apple.

Ans:_____cents

29. The figure below shows the number of books borrowed by children at a regional library for a week. Calculate the total number of books borrowed for that week.

Regional library's borrowing records

Ans: _____
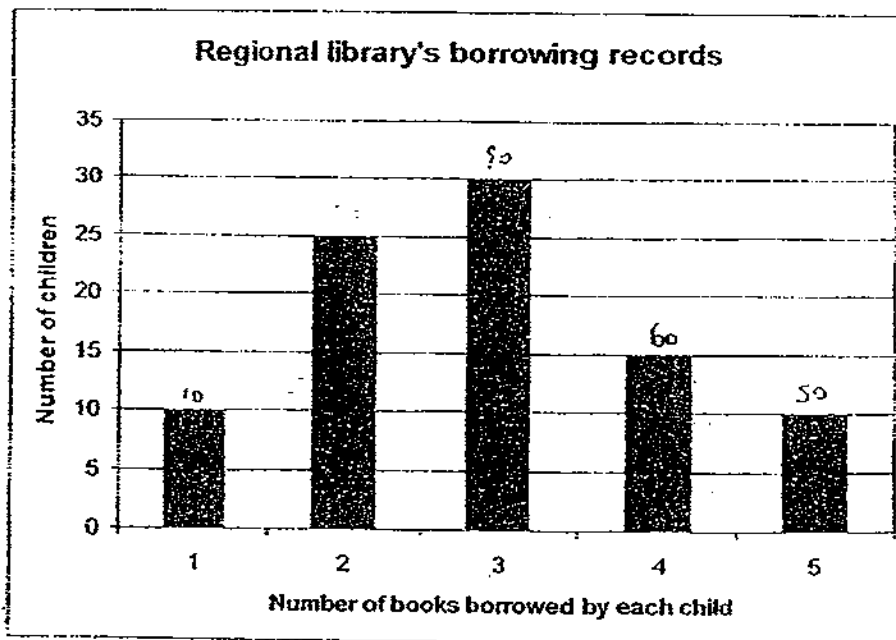
30. A man travels from Town X to Town Y at 4 km/h and from Town Y to Town X at 6 km/h via the same route. The whole journey takes 45 minutes. Find the distance from Town X to Town Y.

Ans: _____ km

End of Paper 1

11

Name : _____ (,) 26 August 2009

Class : P 6 _____

CATHOLIC HIGH SCHOOL

PRELIMINARY EXAMINATION 3

PRIMARY SIX

MATHEMATICS

PAPER 2

Total Time: 1 h 40 min

Parent's Signature: _____

Paper 1 Booklet A		20
Paper 1 Booklet B		20
Paper 2		60
Total Marks		100

INSTRUCTIONS TO CANDIDATES

Do not turn over this page until you are told to do so.

Follow all instructions carefully.

Answer all questions.

Show your working clearly as marks are awarded for correct working.

Write your answers in this booklet.

You are allowed to use a calculator.

Questions 1 to 5 carry 2 marks each. Show your working clearly in the space below each question and write your answers in the spaces provided. For questions which require units, give your answers in the units stated. (10 marks)

1. A pen costs 40 cents more than a ruler. John paid $x for a pen and a ruler. Find the cost of a ruler in cents.

   Ans: _____ cents

2. Trees were planted along the perimeter of a rectangle field measuring 9 m by 18 m. If the trees were planted 3 meters apart from one another, how many trees are there altogether?
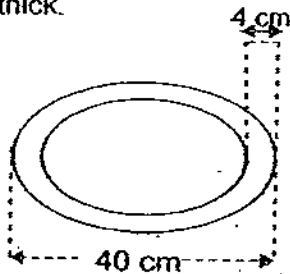
   Ans: _____

3. The figure below is made up of 2 equilateral triangles and 6 identical sectors. Find the total area of the shaded parts. (Take $\pi = \frac{22}{7}$)
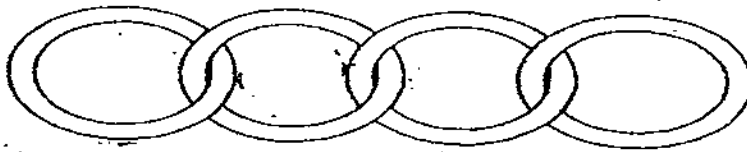
   14 cm
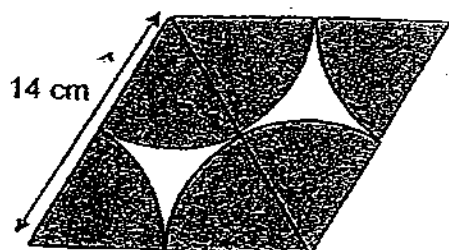
   Ans: _____ cm^2

   (Go to the next page)

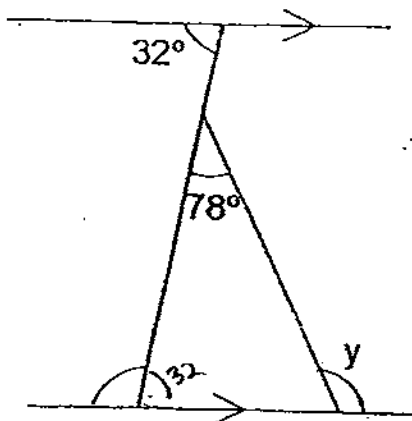4. Each link of a chain has an outside length of 40 cm, and the metal is 4 cm thick.

The diagram below shows a chain which is made up of 4 links.

Find the maximum length, in centimetres, of a chain which is made up of 10 links.

Ans: _____

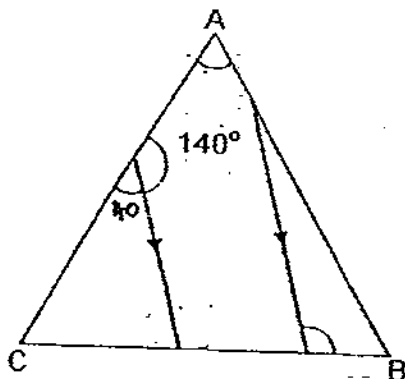5. Find the unknown angle y.

Ans: _____ °

(Go to the next page)

2

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.   In the figure, ABC is an equilateral triangle. Find $\angle h$.

140°

h0°

A

C   B

Ans: _____ ° [3]

7.   A bag contains some green, red and blue marbles. $\frac{1}{2}$ of the red marbles is equal to $\frac{2}{5}$ of the green marbles. The number of blue marbles is $\frac{2}{3}$ of the total number of green and red marbles. If there are 12 more blue marbles than green marbles, how many marbles are there in the bag altogether?
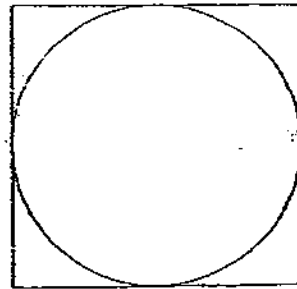
Ans: _____ [3]

(Go to the next page)

8. Bryan had 50% as many stickers as Alvin. After Bryan gave away 30% of his stickers and Alvin gave away 75% of his stickers, they had 90 stickers left altogether. How many stickers did Alvin have at first?
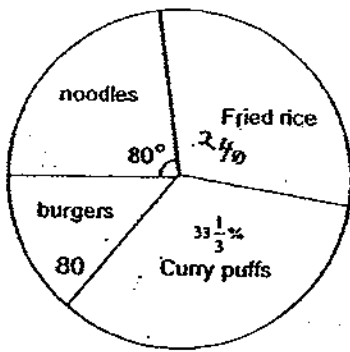
Ans: _____[3]

9. A piece of wire 50 cm long is cut into two pieces. One of which is bent into a circle with radius r cm, and the other forms the square enclosing it. Calculate the length of the diameter, using π as $\dfrac{22}{7}$.

Ans: _____[3]

(Go to the next page)

4

10. The pie chart below shows the type of food consumed by people in a food court. The ratio of the number of people who consumes burgers to those who consumed fried rice is 1:3. Given that 80 people like to eat burgers, how many people are there at the food court?

Ans : _____ [3]

11. Find the unknown angles marked a, b and c in the rectangle.
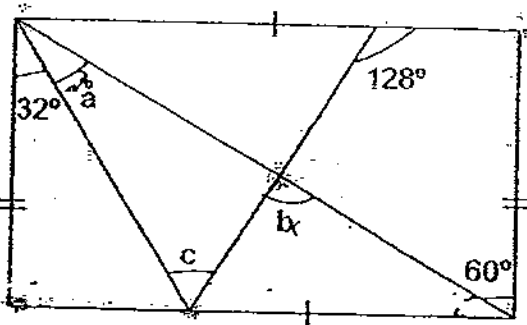
Ans : ∠a = _____ ° [1]

Ans : ∠b = _____ ° [1]

Ans : ∠c = _____ ° [1]

(Go to the next page)

2. Figure 1 below shows a rectangular tank containing 6 cubes and filled with water to its brim. In figure 2, four cubes were removed from the same tank and the water level dropped by 4.5 cm. After that, a certain amount of water was drained off the tank until the water level reaches the same height as the remaining cubes. Find the volume of water in the tank in figure 2.
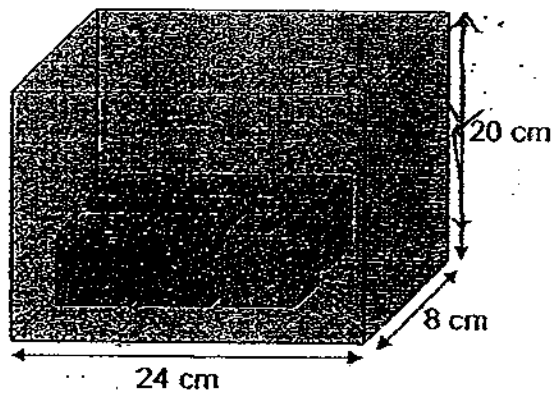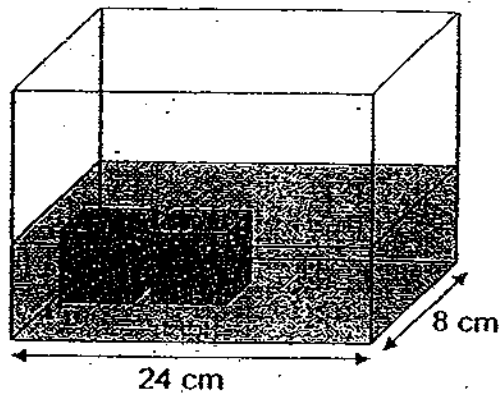
Figure 1

Figure 2

Ans: _____[4]

3. The figure below is made up of 4 shaded parts formed by a circle and an isosceles triangle XYZ. The circle has a diameter of 12 cm and in the triangle XYZ, XY = XZ = 13 cm and YZ = 10 cm.

   (a) Calculate the perimeter of the shaded parts.
   (b) Calculate the difference between shaded area 'A' and 'B'

Use the value of π in the calculator and round off your answers to 2 decimal places.
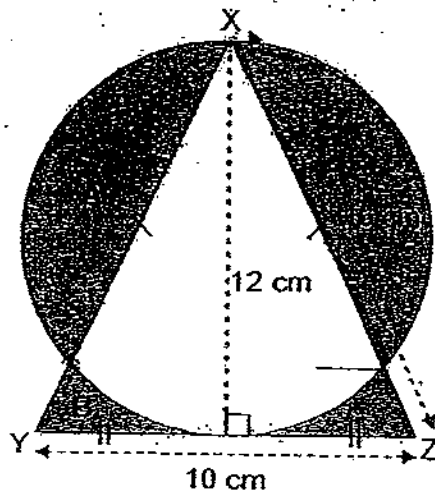
12 cm

Y   10 cm   Z

Ans: : (a)_____[2]

Ans: : (b)_____[2]

(Go to the next page)

4. The figures below are made up of colored dots. Look the figures below and answer the following questions.
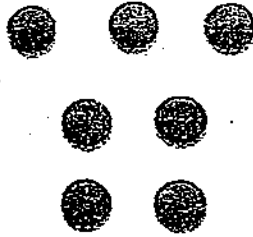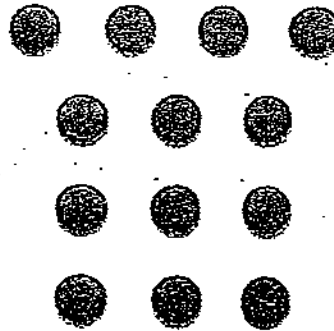
Figure 1   Figure 2   Figure 3

(a) Calculate the number of dots in figure 4. (1m)

(b) Calculate the number of dots in figure 20. (2m)

(c) Which figure contains 1122 coloured dots? (2m)
1123

Ans: (a)_____ [1]

Ans: (b)_____ [2]

Ans: (c) _____ [2]

(Go to the next page)

8

15. The figure below shows a pattern made up of 4 identical squares, 4 semicircles and 4 quadrants. Using π as $\frac{22}{7}$, calculate

(a) the total area of the shaded regions,

(b) the total perimeter of the shaded regions.

14 cm

14 cm

14 cm   14 cm
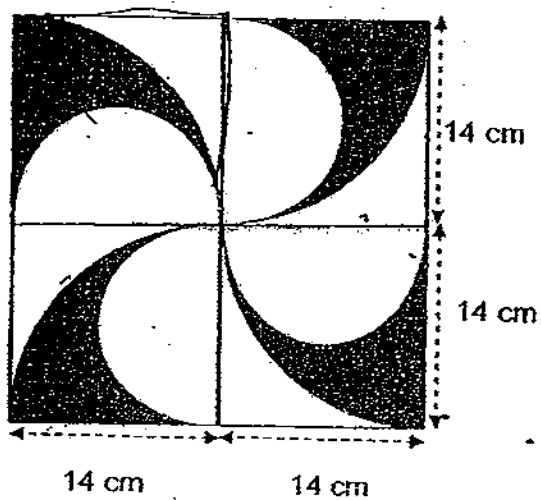
Ans: (a) _____ [2]

Ans: (b) _____ [2]

(Go to the next page)

16. A Spaceship Lego set costs $80 more than a Tommy train set at a toyshop.
During its anniversary, a storewide 20% discount was given to all customers.
In addition, members of the toyshop enjoy an additional 10% discount.
Mr Tan, a member of the toyshop, paid a total of $345.60 for the Spaceship lego
set and the Tommy train set.
Calculate the original price of the Spaceship Lego set.

Ans: _____ [5]

(Go to the next page)

10

17. Mr Tan took 6 h to drive from Town A to Town B.
    Mr Lim, who started at the same time as Mr Tan, took 4 h to drive from Town B to Town A.
    When they met each other, they were 48 km away from the midpoint of Town A and Town B.
    (a) Calculate the distance between Town A and Town B.
    (b) Calculate the speed of Mr Tan.

Ans: (a)_____[3]

Ans: (b)_____[2]

(Go to the next page)

18. 20% of John's savings is \$120 more than 30% of Brian's savings. After John spent $\frac{5}{6}$ of his savings and Brian spent $\frac{1}{2}$ of his savings, John has \$20 more than Brian. Find the savings of John. at first

Ans: _____ [5]

End of Paper 2

SCHOOL : CATHOLIC HIGH PRIMARY
SUBJECT : PRIMARY 6 MATHEMATICS

TERM : PRELIM 3

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

16)South   17)$(50-y/4)   18)1/200   19)$3.10   20)0.63

21)2.5%   22)   23)4:7   24)17.5   25)25

26)12cm   27)
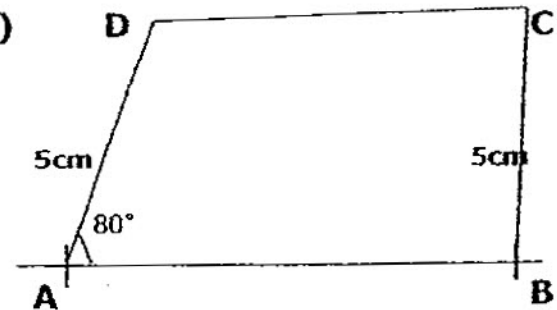
28)50 cents   29)260   30)1.8km

Paper 2

1)(50 -20)cent   2)18   3)154   4)328cm   5)110

6)100   7)180   8)150   9)7cm   10)720°

11)a)28 °   12)720cm₃   13)a)73.70cm   14)a)21
   b)98°   b)26.55cm₂   b)421
   c)70°   c)33

15)a)308cm$_2$ b)232cm

16)$280

17)a)480km   b)80km/h

18)$1080

13 (A)

Perimeter
circle + triangle

$2\pi r + 13 + 13 + 10$

$= 2 \times \pi \times 6 + 36$

$= 12\pi + 36$

$= 73.70 \text{cm}$

Difference
(circle − triangle) ÷ 2

$[\pi r^2 - \frac{1}{2} \times b \times h] \div 2$

$[6 \times 6 \times \pi - \frac{1}{2} \times 10 \times 12] \div 2$

$= 26.55 \text{cm}^2$

2. 4 cubes volume
$= 24 \times 8 \times 4.5$
$= 864 \text{cm}^3$

1 cube volume
$= 864 \div 4$
$= 216 \text{cm}^3$

length of cube = 6cm
Since $6 \times 6 \times 6 = 216 \text{cm}^3$

Volume of water in Figure 2

$(24 \times 8 \times 6) - 216 \times 2$

720cm^3

$\angle a = 60° - 32°$
$= 28° \text{ (alt. } \angle\text{)}$

$\angle b = 180° - 52° - 30°$
$= 98°$

$\angle c = \angle b - \angle a$
$= 98° - 28° = 70°$

3. fried rice $= 80 \times 3 = 240$

Curry puff $= 33\frac{1}{3}\%$ of 360°
$= 120°$

$360° - 120° - 80° = 160°$

$160° \to 240 + 80$

$1° \to 2$

Total at food court
$= 360°$

Q9. Perimeter
= sq + circle
$= 8r + 2\pi r$
$= 8r + 2(\frac{22}{7})r$
$= 8r + \frac{44}{7}r$
$= \frac{56r}{7} + \frac{44}{7}r$
$= \frac{100r}{7} = 50 \text{cm}$

$r = \frac{7 \times 50}{100} = 3.5 \text{cm}$

diameter = 7cm

Q8. B 50%
A 100%

30% of 50% = 15%

B left 50% − 15% = 35% ⎱ 90
A left 100% − 75% = 25% ⎰

$60\% \to 90$
$1\% \to 1.5$

Aluminium at first = 100% = 150

Q7. $\frac{1}{2}$ red $\to \frac{2}{5}$ G ⎱ R : G
$\frac{2}{4}$ R $\to \frac{2}{5}$ G ⎰ 4 : 5

B : Total (R+G) ⎱ B : R : G
2 : 3 ⎰ 6 : 4 : 5
×3   ×3
= 6 : 9

1u = 12

Total → 15u = 15 × 12
= 180

Q6.

h = 60 + 40 = 100°

Q5.

y = 78° + 32°
= 110°

% J is $120 more than 30% B
÷5   ×5   ×5

% J is $600 more than 150% B

←— 100% —→
|x|x| | | | -$500
|x|x|x|x|x| | $600 |
←——— 150% ———→

+

| | |←$20→|
| | + $100 |

] → $80

% of John
6 × $80 + $600

$1080

For whole journey
T : T_L = 6 : 4
        = 3 : 2
S_T : S_L = 2 : 3

en they met, time is
the same.
ince S_T : S_L = 2 : 3
   D_T : D_L = 2 : 3

←— 2u —→←——— 3u ——→

                                    B
        midpt
        ←→
        48km

½ u → 48 km

1u → 96 km

) Total dist = 96 × 5
                = 480 km

) Speed (Tan) = 480 km / 6h
                = 80 km/h

16   100% - 20% = 80%

member paid $\frac{90}{100}$ × 80% = 72%

72% of $80 = $57.60

Lego | Train | $57-60 |} $345·60
Train | | |

[ ] = $\frac{\$345·60 - \$57·60}{2}$

    = $144

Lego = $144 + $57·60
     = $201·60

original price = $\frac{100}{72}$ × $201·60
               = $280

Q15
(a) Total area = (quad - small semi)
                    or
               2 small circles or
                 1 big semi
$\frac{22}{7}$ × 14 × 14
                        = $\frac{\pi r^2}{2}$ = $\frac{22}{7}$ × 14 × 14 / 2
= 22 × 14
= 308   = 308 cm²

(b) Total perimeter
    = 2 big circles + 14 × 4
    = 2 × 2πr + 56
    = 4 × $\frac{22}{7}$ × 14 + 56
    = 176 + 56
    = 232 cm

Q14 a) Fig 4 - 5 × 4 + 1 = 21
    b) Fig 20 = 20 × 21 + 1 = 421
    c) 1123 - 1 = 1122
       33 × 34 = 1122
       Figure 33