PEI HWA PRESBYTERIAN PRIMARY SCHOOL
PRELIMINARY EXAMINATION

PRIMARY 6
MATHEMATICS PAPER 1
(BOOKLET A)

21 AUGUST 2018

Name: _____

Form Class / Register No.   : 6R _____ / _____

Banded Class / Register No. : 6M _____ / _____

Total time for Booklets A and B: 1h

INSTRUCTIONS TO CANDIDATES

1. Write your Name, Class and Register No. in the spaces provided above.

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 on the Optical Answer Sheet (OAS) provided.

6. The use of calculator 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   Find the value of 72 hundreds and 16 ones.

    (1)   7216

    (2)   880

    (3)   736

    (4)   88   (   )

2   Which of the following is equal to $5\frac{1}{3}$?

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

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

    (3) $16 \times \frac{1}{3}$

    (4) $16 \div \frac{1}{3}$ (   )

3   Which one of the following numbers is nearest to 8 ?

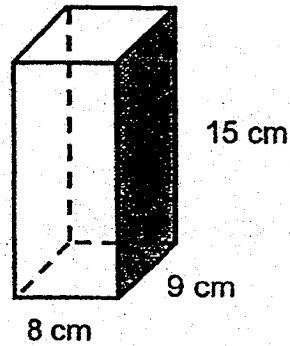   (1)   8.1

    (2)   8.09

    (3)   8.03

    (4)   8.004   (   )

4   Express 1 036 millilitres in litres.

    (1)   1.036 litres
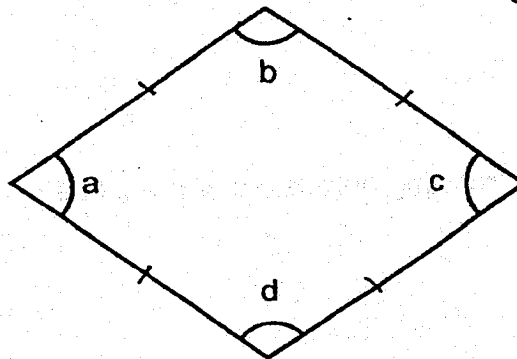
    (2)   1.36 litres

    (3)   10.36 litres

    (4)   101.36 litres   (   )

5   The empty cuboid below measures 8 cm by 9 cm by 15 cm. Find the area of the shaded face.

15 cm

9 cm

8 cm

    (1)   1080 cm²

    (2)   135 cm²

    (3)   120 cm²

    (4)   72 cm²   (   )
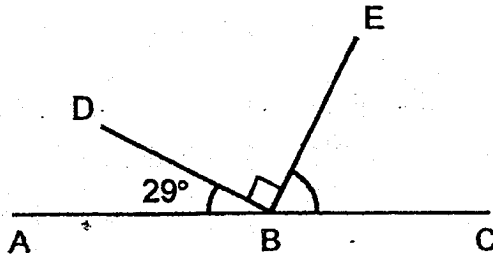

6   The figure below shows a rhombus. Which of the following is true?

b

a

c

d

    (1) $\angle a = 90°$?

    (2) $\angle b = \angle c$ ×

    (3) $\angle b + \angle d = 180°$ ×

    (4) $\angle a + \angle b = 180°$ ✓   (   )

7   In the figure, ABC is a straight line. ∠DBE = 90° and ∠DBA = 29°.
    Find ∠EBC.

    (1)   21°

    (2)   61°

    (3)   90°

    (4)   151°   (   )

8   Find 2% of $2000.

    (1) $4

    (2) $40

    (3) $400

    (4) $4000   (   )

9   In a class, there are 38 students. 28 of them are girls and the rest are boys.
    Find the ratio of the number of girls to the number of boys to the total number
    of students in the class.

    (1)   5 : 14 : 19

    (2)   5 : 19 : 14

    (3)   14 : 5 : 19

    (4)   14 : 19 : 5   (   )

10   The pie chart shows how Doris spent her money. How much did Doris spend
      on clothes?
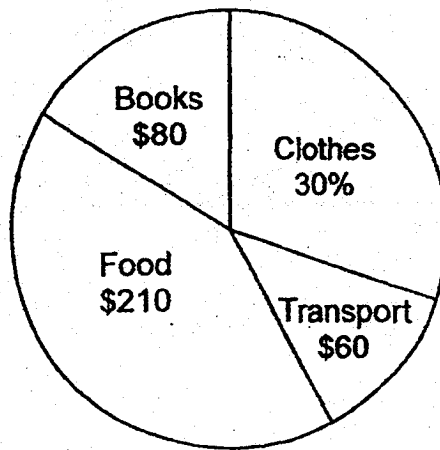
      (1) $70
      (2) $150
      (3) $190
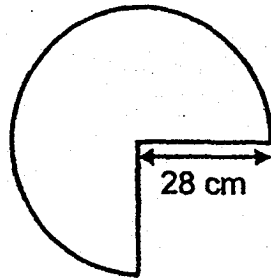   (4) $500   (   )

11   Roy uses the four letters, C, A, R, E, to form a pattern. The first 16 letters are
      shown below. Which letter is in the 59th position?

      ┌──┐
      │   C A R E C A R E C A R E C A R E...   │
      │   1st   16th   │
      └──┘

      (1)   C
      (2)   A
      (3)   R
      (4)   E   (   )
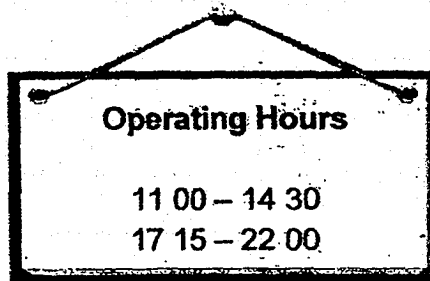
12   Find the perimeter of a $\frac{3}{4}$ circle of radius 28 cm. (Take $\pi = \frac{22}{7}$)

28 cm

(1)   132 cm

(2)   144 cm

(3)   188 cm
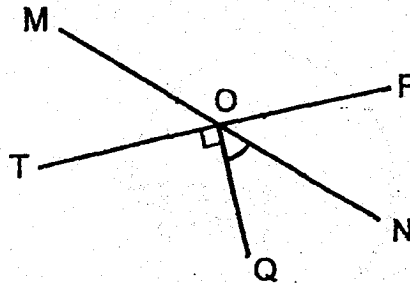
(4)   232 cm   (   )

13   A restaurant opens daily for the time shown in the table below.

Operating Hours

11 00 – 14 30
17 15 – 22 00

How many hours and minutes is the restaurant open each day?

(1)   11 h 15 min

(2)   10 h 15 min

(3)   9 h 15 min

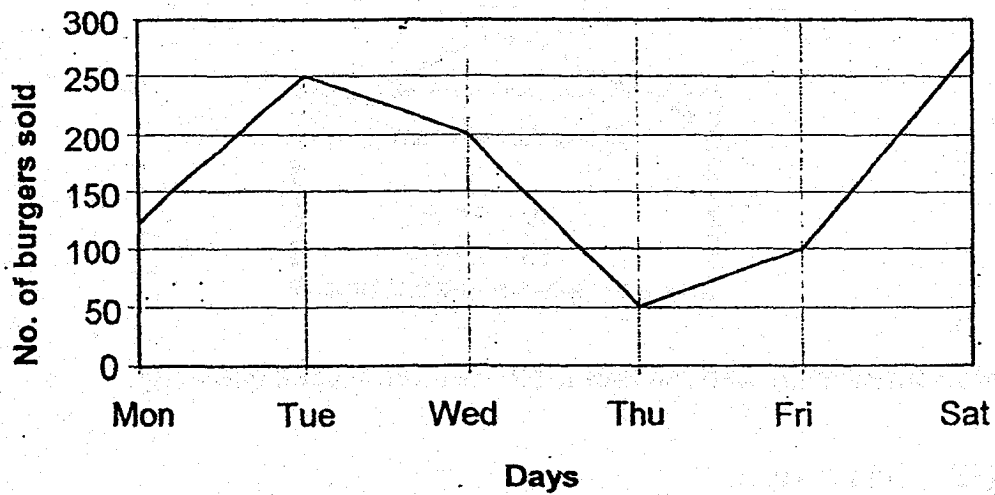(4)   8 h 15 min   (   )

14. In the figure below, MN and TP are straight lines. ∠MOP is twice the size of ∠MOT. Find ∠NOQ.

(1) 30°

(2) 45°

(3) 54°

(4) 60°

(   )

15. The line graph shows the number of burgers Mr Tan sold from Monday to Saturday.

Each burger was sold at $4. How much more money did Mr Tan earn on Tuesday than on Thursday?

(1) $200

(2) $600

(3) $800

(4) $1000

(   )

PEI HWA PRESBYTERIAN PRIMARY SCHOOL
PRELIMINARY EXAMINATION

PRIMARY 6
MATHEMATICS PAPER 1
(BOOKLET B)

21 AUGUST 2018

Name: _____

Form Class / Register No.   : 6R_____ / _____

Banded Class / Register No. : 6M_____ / _____

	Parent's signature

Total time for Booklets A and B: 1h

INSTRUCTIONS TO CANDIDATES

1. Write your Name, Class and Register No. in the spaces provided above.

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 all your answers in this booklet.

6. The use of calculator is **NOT ALLOWED**.

Marks (Booklet A) :	20
Marks (Booklet B) :	25
Total Marks (Booklets A and B) :	45

This booklet consists of 7 printed pages, excluding the cover page.
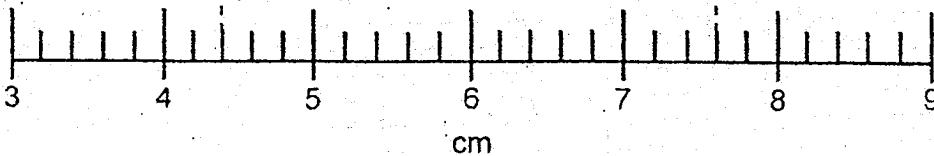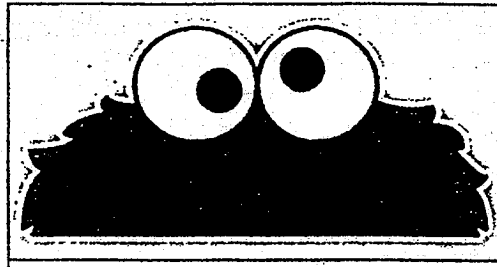
Questions **16** to **20** carry 1 mark each. Write your answers in the spaces provided. For questions which require units, give your answers in the units stated. (5 marks)

Do not write in this space

16   Find the value of $12.3 - 0.99$.

Ans: _____

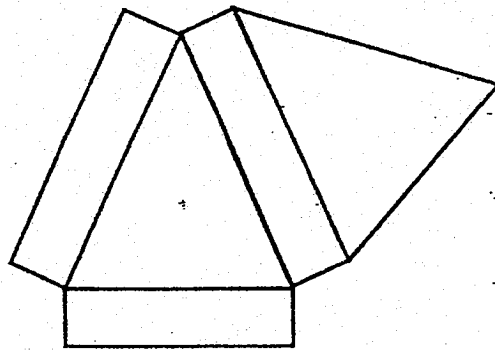17   What is the length of the sticker as shown in the figure below?

Ans: _____ cm

18   Express 0.035 as a percentage.

Ans: _____ %

19   Name the solid formed by the following net.
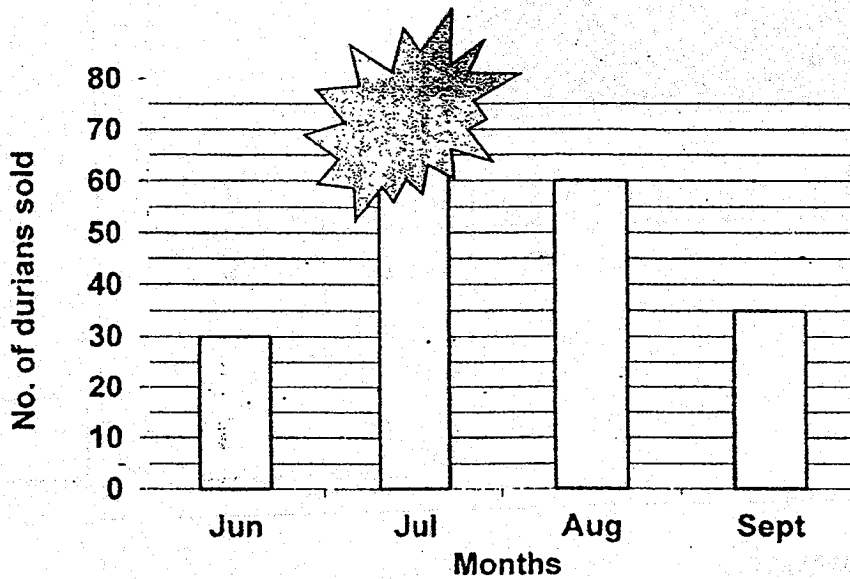

Ans: _____

0

20   The bar graph below shows the number of durians Mr Tan sold from June to
September.

The total number of durians sold by Mr Tan from June to September was
200. How many durians were sold in July?

Ans: _____

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)

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21 Express $2\frac{6}{7}$ as a decimal. Give your answer to 2 decimal places.
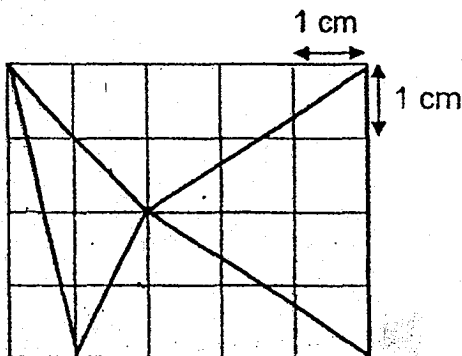
Ans: _____

---

22 The table below shows the postage rate for mail at a post office. How much does Jack have to pay if his parcel weighs 67 g?

Mass Step	Postage ($)
First 30 g	$2.00
Every additional 10 g	$0.90

Ans: $ _____

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23 The figure below shows 2 shaded triangles. Find the total area of the shaded triangles.

1 cm

1 cm

Ans: _____ cm²

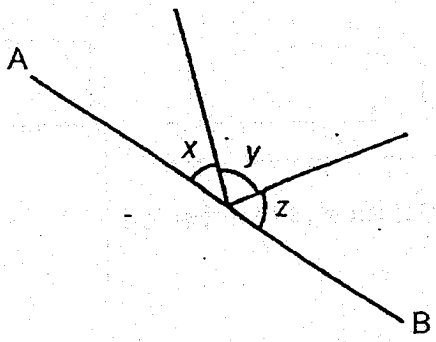
24   Jenny wants to cut the maximum number of identical circles from a piece of
      rectangular cardboard measuring 100 cm by 20 cm as shown in the figure
      below. What is the total area of the circles cut out from the cardboard?
      (Take $\pi = 3.14$)
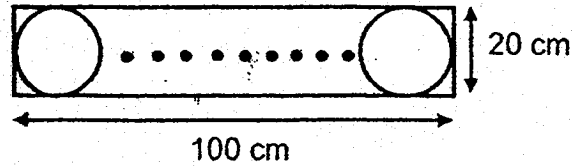
Ans: _____ cm²

25   In the figure below, AB is a straight line. The sum of $\angle x$ and $\angle y$ is 124°. The
      sum of $\angle x$ and $\angle z$ is 97°. Find $\angle x$.

Ans: _____ °

26   Gwen is 6 times as old as her brother. In 12 years' time, she will be twice as old as her brother. How old is Gwen now?

Ans: _____

27   The table below shows the number of hamsters owned by a group of children. The total number of hamsters owned by the children is 88. How many children owned 2 hamsters?

Number of hamsters	0	1	2	3	4
Number of children	4	12	?	10	6

Ans: _____

28   In the figure below, there are 2 squares. Each side of the smaller and larger square is y cm and $(y + 1)$ cm respectively. Find the perimeter of the figure.

$(y + 1)$ cm

y cm
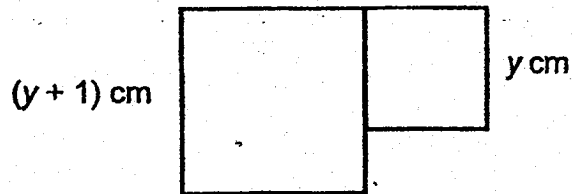
Ans: _____ cm

29   Muthu sold 147 marbles on Monday. He sold $\frac{3}{7}$ of the remainder on Tuesday and had half of his marbles left. Find the number of marbles he sold altogether.
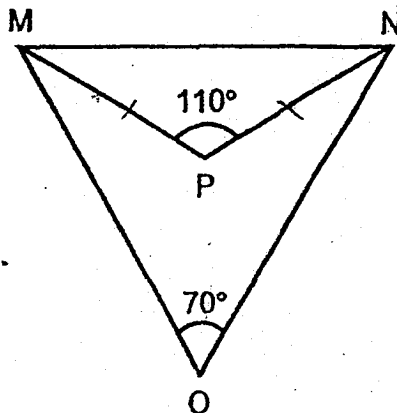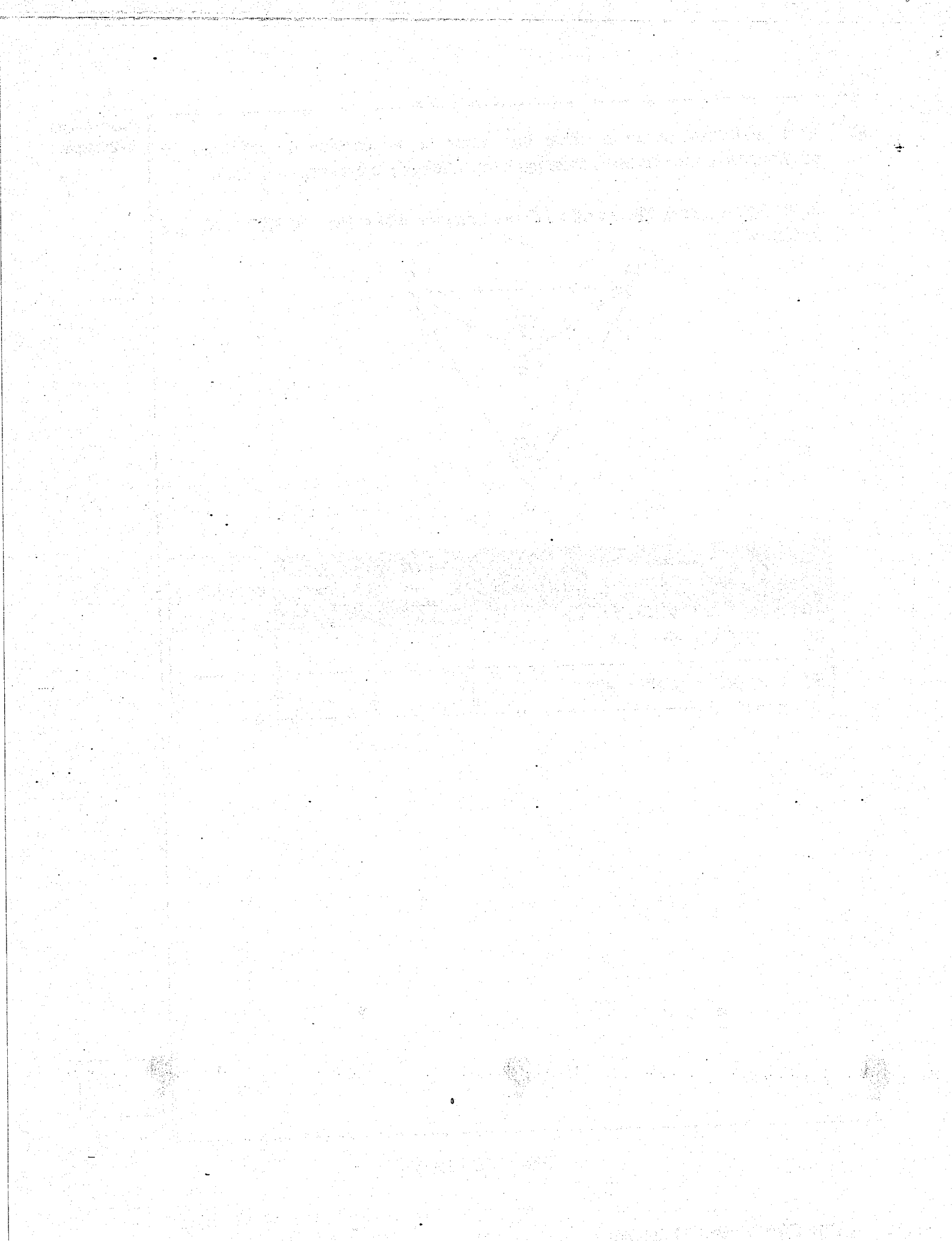
Ans: _____

30 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.

In the figure below, MNO and MNP are triangles. PM = PN, ∠MPN = 110° and ∠MON = 70°.

Statement		True	False	Not possible to tell
(a)	∠MNP is 35°.			
(b)	∠OMP = ∠ONP = 20°			

-- End of Booklet B --

PEI HWA PRESBYTERIAN PRIMARY SCHOOL
PRELIMINARY EXAMINATION

PRIMARY 6
MATHEMATICS
PAPER 2

21 AUGUST 2018

Name: _____

Parent's signature

Form Class / Register No.   : 6R_____ / _____

Banded Class / Register No. : 6M_____ / _____

Total time: 1h 30min

INSTRUCTIONS TO CANDIDATES

1. Write your Name, Class and Register No. in the spaces provided above.

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 all your answers in this booklet.

6. The use of an approved calculator is expected, where appropriate.

Paper 1 :		45
Paper 2 :		55
Total Marks :		100

This booklet consists of 13 printed pages, excluding the cover page.
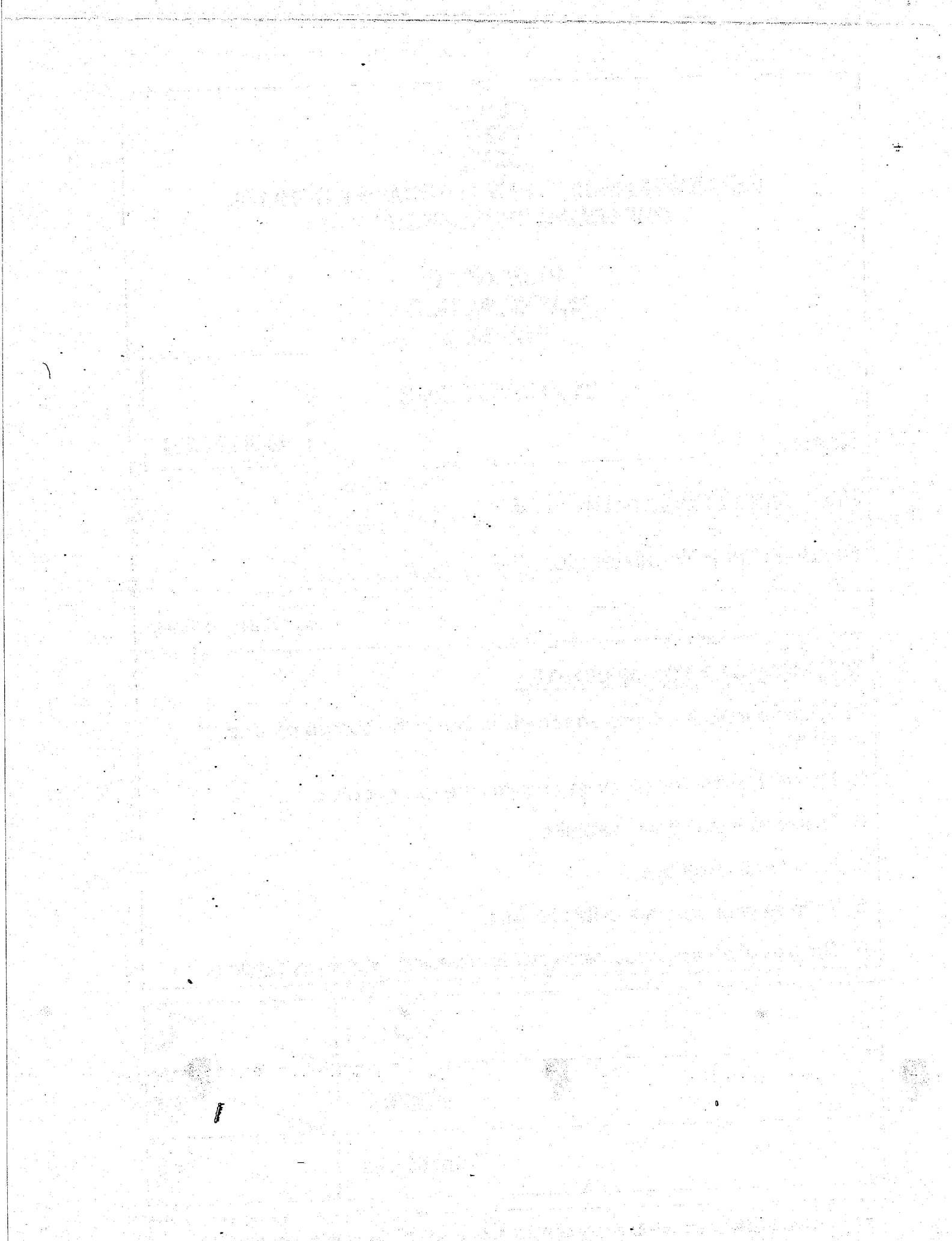
Questions 1 to 5 carry 2 marks each. Show your working clearly and write your answers in the spaces provided. For questions which require units, give your answers in the units stated. **(10 marks)**

1   A bottle is $\frac{3}{4}$ filled with water. This amount of water is equivalent to 5 identical cups of water. 2 cups of water from the bottle are then poured away. What fraction of the bottle is still filled with water?
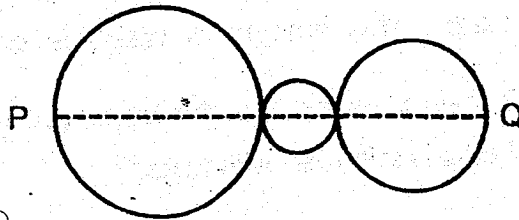
Ans: _____

2   Mrs Brooklyn had enough money to buy either 6 mops or 9 brooms. Each mop was $3.85 more than each broom. How much money did she have?
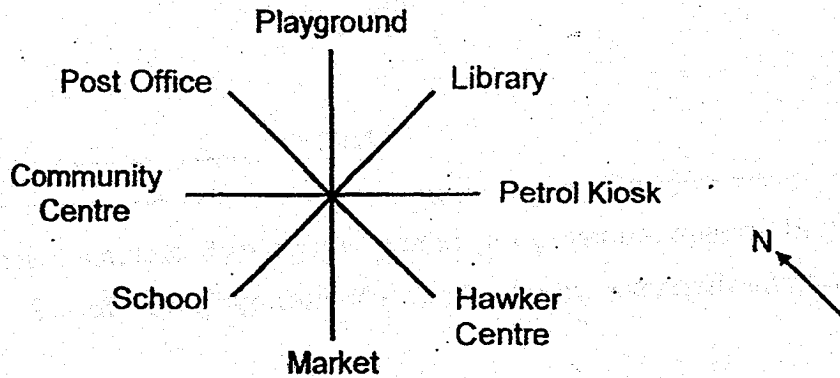
Ans: $ _____

3   Three circles are placed side-by-side as shown below. PQ is 7.5 cm and it cuts through the centres of all the circles. Find the circumference of the 3 circles. (Take π = 3.14)

Ans: _____ cm
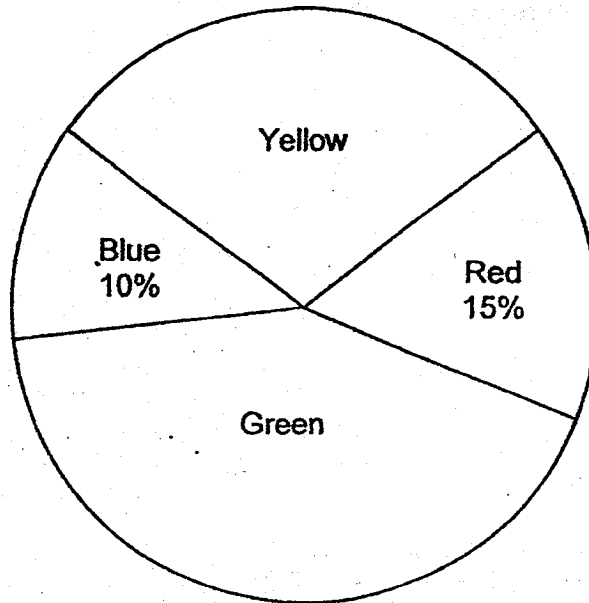
4   The following diagram shows 8 different locations.

Jasmine is facing the south-west direction at first. Which location will she be facing after making a 135° anti-clockwise turn?

Ans: _____

5   Roslina has some coloured beads as shown in the pie chart below.

The ratio of the number of yellow beads to the number of green beads is

2 : 3. What percentage of the beads is green?

Ans: _____ %

For questions 6 to 17, show your working clearly 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. (45 marks)

Do not write in this space

6   A cubical container contained 2.25 ℓ of water when $\dfrac{2}{3}$ filled. Find the length of one side of the container.

Ans: _____ [3]

7   At a bakery shop, a cupcake costs $x and a brownie costs 80¢ more than the cupcake. Thomas wants to buy an equal number of cupcakes and brownies. What is the maximum sets of cupcakes and brownies Thomas can buy with $50?
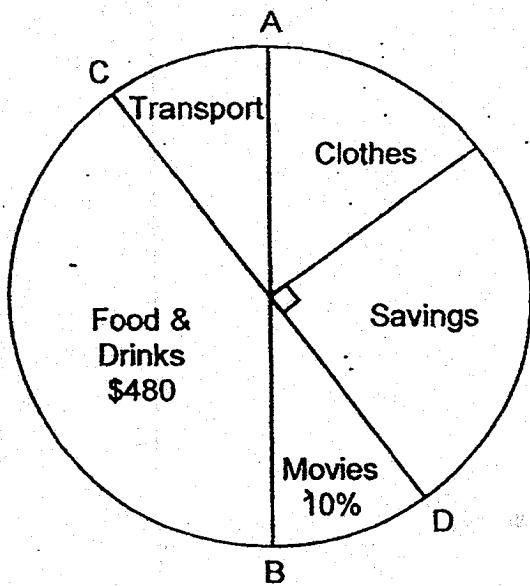
Ans: _____ [3]

8   Mr Ong has 3 bags of rice, Bag A, Bag B and Bag C. Bag C weighs 600g. Bag A weighs 600g more than half of Bag B. The mass of Bag B is the total mass of Bag A and Bag C. What is the total mass of the 3 bags of rice?

Ans: _____ [3]

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9   The pie chart below shows how Wilbur spent his salary last month.
AB and CD are straight lines. Wilbur spent 10% of his money on watching movies. He spent the same amount of money on transport and watching movies. Find the amount of money he spent on clothes.
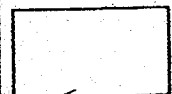

Ans: _____ [3]

10   A car set off at 07 45 from Town A at an average speed of 80 km/h and reached Town B at 09 45. A truck set off from Town A 2 hours earlier and reached Town B at the same time as the car. If the truck were to increase its average speed by 10 km/h, how much time would it have taken to reach Town B?
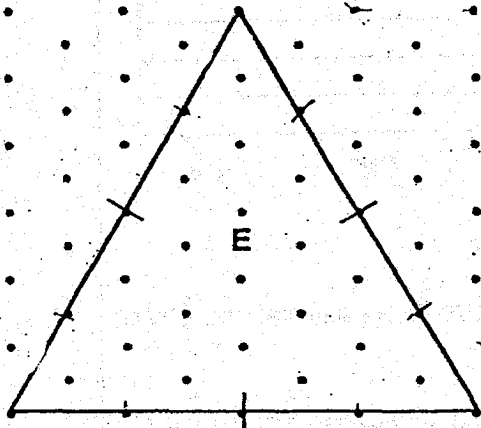
Ans: _____ [3]
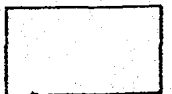
11   An equilateral triangle **E** is drawn by joining dots on the grid below with three straight lines. In the same way,

(a)   draw an isosceles triangle with the same height as **E**. Label the triangle **T**. [1]

(b)   draw a rhombus with the same perimeter as **E**. Label the rhombus **R**. [2]

(c)   Find the sum of all the angles in **E**, **T** and **R**.

Ans: (c) _____ [1]

12   The line graph below shows the amount of money Mrs Kim spent during the Great Singapore Sale from June to November.
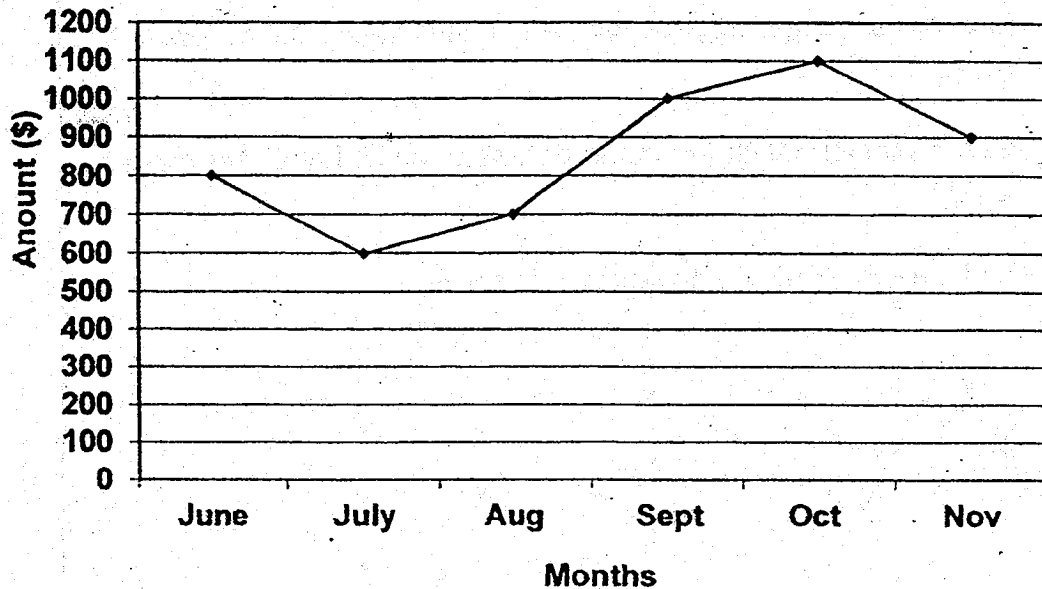
(a)   What was the average amount of money Mrs Kim spent at the Great Singapore Sale over the six months?

(b)   Mrs Kim used the amount of money spent in November to buy a dress, a necklace and a watch in the ratio 4 : 5 : 3. How much did the necklace cost?

Ans: (a) _____ [2]

(b) _____ [2]

13 Kate had 70 more Otah buns than Curry buns. She sold $\frac{3}{4}$ of the Otah buns and $\frac{3}{5}$ of the Curry buns. She sold 126 more Otah buns than Curry buns. What fraction of the remaining buns that Kate had were Curry buns?

Ans: _____ [4]

14   Hailey used 4 identical sticks to form a square as shown below.

She then formed a pattern using more of the sticks.

(a) How many sticks are used to form 13 squares?

(b) How many squares are formed using 100 sticks?.

Ans: (a) _____ [2]

(b) _____ [2]

15 Study the figure below.
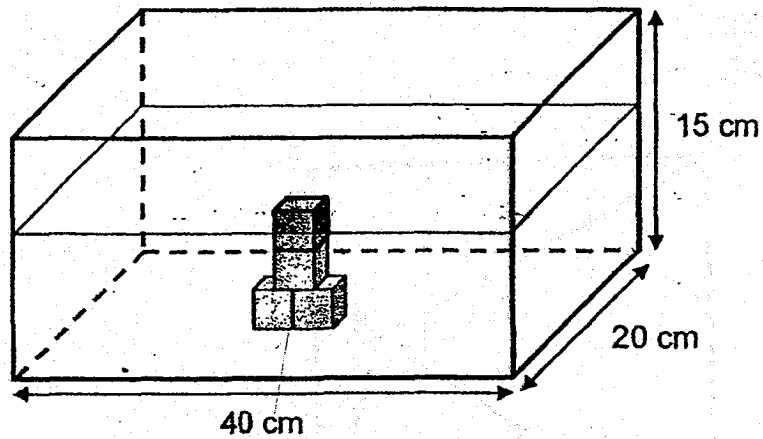
Four 3-cm cubes were placed in a tank measuring 40 cm by 20 cm by 15 cm. 5747.3 cm³ of water was then poured into the tank. Find the height of the water level in the tank.

Ans: _____ [4]

16   In the figure below, ABCD is a square. DE = DC and $\angle$ECB is $\frac{1}{4}$ of $\angle$ECD.

(a)   Find $\angle$AED.
(b)   Find $\angle$BAE.

Ans: (a) _____ ,[4]

(b) _____ [1]
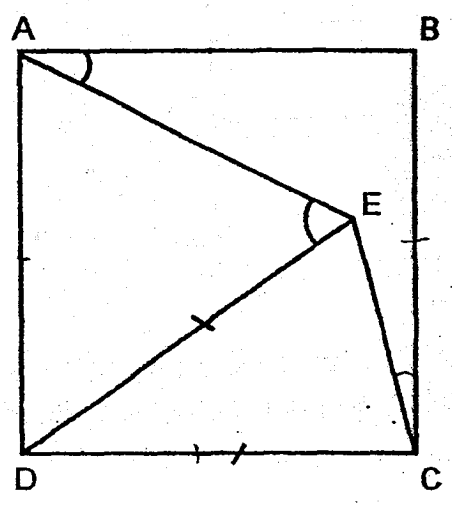
17   Lynn baked some cookies. 20% of the cookies were eaten. The rest of the cookies were given to Ryan, Gerald and Tim in the ratio of 7 : 3 : 2. After Ryan gave 320 cookies to Tim, Tim then had 50% as many cookies as Ryan. How many cookies did Lynn bake at first?

Ans: _____ [5]

ANSWER KEY

YEAR   : 2018
LEVEL   : PRIMARY 6
SCHOOL : PEI HWA PRESBYTERIAN PRIMARY SCHOOL
SUBJECT : MATHEMATICS
TERM   : PRELIMINARY EXAMINATION

PAPER 1 BOOKLET A

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

PAPER 1 BOOKLET B

Q16) 11.31

Q17) 3.2cm

Q18) 3.5%

Q19) Triangular prism

Q20) 75 durians

Q21) 2.86

Q22) $3.60

Q23) 9cm^2

Q24) 1570cm^2

Q25) 41°

Q26) 18 years old

Q27) 11 children

Q28) (6y + 4) cm

Q29) 588 marbles

Q30) a: true   b: Not possible to tell

PAPER 2

Q1) 5 cups $\rightarrow \dfrac{3}{4}$

     1 cup $\rightarrow \dfrac{3}{4} \div 5$

          $= \dfrac{3}{20}$ bottle

    $5 - 2 = 3$

     3 cups $\rightarrow \dfrac{3}{20} \times 3$

       Ans $= \dfrac{9}{20}$ bottle

Q2) $9 - 6 = 3$

    3 brooms $\rightarrow 3.85 \times 6 = \$23.10$

    1 broom $\rightarrow 23.10 \div 3 = \$7.70$

    9 brooms $\rightarrow 7.70 \times 9 = \underline{\$69.30}$

Q3) $3.14 \times 7.5 = \underline{23.55 cm}$

Q4) $90 \div 2 = 45$

    $90 + 45 = 135$

        $= \underline{Library}$

Q5) Y : G

    2 : 3 (5u)

    5u $\rightarrow 100 - 10 - 15 = 75\%$

    1u $\rightarrow 75 \div 5 = 15\%$

    3u $\rightarrow 15 \times 3 = \underline{45\%}$

Solutions to Word Problems

Pei Hwa Paper 2

P6 Mathematics SA2 2018

Show your working clearly in the space provided for each question and write your answers in the spaces provided.

6. $\dfrac{2}{3}$ filled with water → 2.25 ℓ

    $\dfrac{1}{3}$ → 2.25 ÷ 2 = 1.125 ℓ

    $\dfrac{3}{3}$ → 1.125 x 3 = 3.375 ℓ = 3375 cm^3 = 15 x 15 x 15 cm^3

    Length of container = 15 cm

    Ans: 15 cm

---

7. Cost of 1 set of 1 cupcake and 1 brownie = 2x + 0.8

    Number of sets of 1 cupcake and 1 brownie = $\dfrac{50}{2x + 0.8}$

    Ans: $\dfrac{50}{2x + 0.8}$

    .

---

8. Let mass of Bag A = a

    Mass of Bag B = b

    b = a + 600   (1)

    $a = 600 + \dfrac{1}{2}b$ (2)

    $b = 600 + \dfrac{1}{2}b + 600$ (3) substitute (2) into (1)

    $\dfrac{1}{2}b = 1200$

    b = 2400

    $a = 600 + \dfrac{1}{2} \times 2400 = 1800$

    a + b + c = 1800 + 2400 + 600 = 4800g

                                                    Ans: 4800g

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9. Percentage spent on food & drinks = 50% - 10% = 40%

    40% → $480

    1% → $12

    100% → $1200

    Percentage spent on clothes = 25% - 10% = 15%

    Amount spent on clothes = 12 x 15 = $180

                                                    Ans: $180

---

10. Distance from Town A to Town B = 80 km/h x 2 hr = 160 km

Speed of truck = 160 ÷ (2 + 2) = 40 km / h

New truck speed = 40 + 10 = 50 km/h

Time at new truck speed = 160 ÷ 50 = 3.2 hr

Ans: 3.2 hr

11. a), b)
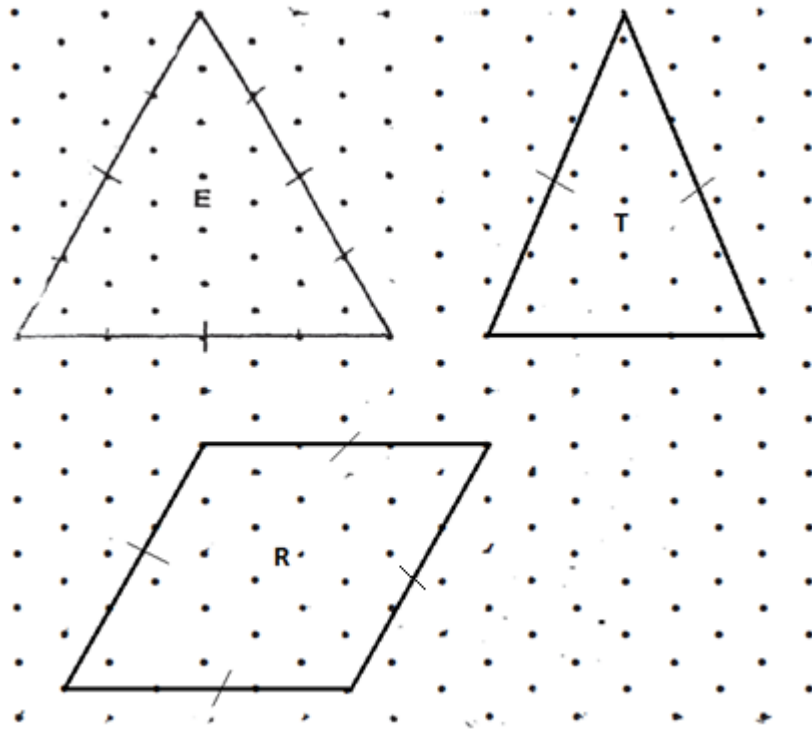
c)

Sum of all angles in E, T and R = 180 + 180 + 360 = 720°

Ans: (a) as shown

(b) as shown

(c) 720°

12. a)

Total spent from June to November = 800 + 600 + 700 + 1000 + 1100 + 900

= $5100

Average amount spent = 5100 ÷ 6 = $850

b)

Cost of necklace = $\dfrac{5}{(4+5+3)}$ x 900 = $375

Ans: (a) $850
(b) $375

13. Let total number of otah buns = 20u   (multiple of 4,5)

Number of otah buns sold = $\dfrac{3}{4}$ x 20u = 15u

Number of curry buns = 20u – 70

Number of curry buns sold = $\dfrac{3}{5}$ x 20u - $\dfrac{3}{5}$ x 70 = 12u - 42

Difference between otah and curry buns sold = 15u – (12u – 42)

= 3u + 42 = 126

3u = 126 – 42 = 84

u = 84 ÷ 3 = 28

Remainder otah buns = 20u – 15u = 5u = 5 x 28 = 140

Remainder curry buns = 20u – 12u – 70 + 42 = 8u -28 = 8x28 – 28 =196

Fraction of remaining buns that are curry buns = $\dfrac{196}{(140+196)}$ = $\dfrac{7}{12}$

Ans: $\dfrac{7}{12}$

14. a)

Let n = number of squares

Number of sticks = (n-1) x 3 + 4 = 3n + 1

= 3 x 13 + 1 = 40

b)

3n + 1 = 100

3n = 100 – 1 = 99

n = 99 ÷ 3 = 33

Ans: (a) 40

(b) 33

15. Volume of 4 3-cm cubes = 4 x 3 x 3 x 3 = 108 cm^2

Total volume of water and cubes = 108 + 5747.3 = 5855.3 cm^3

Base area = 40 x 20 = 800 cm^2

Height of water level = 5855.3 ÷ 800 = 7.32 cm

Ans: 7.32 cm

16.   a)

$\angle$ ECD = 90 ÷ $\frac{4}{5}$ = 72°

$\angle$ DEC = 72°   (Isosceles triangle)

$\angle$ CDE = 180 – 72 – 72 = 36°

$\angle$ ADE = 90 – 36 = 54°

$\angle$AED = (180 – 54) ÷ 2 = 63°   (ADE isosceles triangle)

b)

$\angle$ DAE = 63°

$\angle$ BAE = 90 – 63 = 27°

Ans: (a)   63°

(b)   27°

17. Ratio of number of cookies given to Ryan, Gerald and Tim → 7 : 3 : 2

→ 7u : 3u : 2u

After Ryan gave 1u (320 cookies) to Tim, the ratio becomes

→ 7u – 1u : 3u : 2u + 1u

→ 6u : 3u : 3u   where Tim had 50% as much as Ryan

u = 320

80% of cookies = 7u + 3u + 2u = 12u = 12 x 320 = 3840

10% of cookies = 480

100% of cookies at first = 480 x 10 = 4800

Ans: 4800