Index No. [ ][ ][ ][ ][ ][ ] – [ ]

# PEI CHUN PUBLIC SCHOOL

# PRELIMINARY EXAMINATION, 2018

## MATHEMATICS

## PAPER 1

(BOOKLET A)

Additional materials: Optical Answer Sheet (OAS) **Total Time For Booklets A & B : 1 h**

Name : _____ (  )

Class : Primary 6 /_____

Date : 1 August 2018

**INSTRUCTIONS TO CANDIDATES**

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.

FOLLOW ALL INSTRUCTIONS CAREFULLY.

ANSWER ALL THE QUESTIONS.

SHADE YOUR ANSWERS IN THE OPTICAL ANSWER SHEET (OAS) PROVIDED.

YOU ARE **NOT** ALLOWED TO USE A CALCULATOR.

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)

1. Which of the following is eight hundred and five thousand and twenty-one in figures?

   (1) 85 021

   (2) 805 021

   (3) 850 021

   (4) 8 005 021

2. Round 299 542 to the nearest thousand.

   (1) 290 000

   (2) 299 500

   (3) 300 000

   (4) 300 542

3. What is the value of 500 × 80?

   (1) 40

   (2) 400

   (3) 4000

   (4) 40 000

4. Which of the following is the same as 9.04 ℓ?

   (1) 904 $cm^3$

   (2) 9004 $cm^3$

   (3) 9040 $cm^3$

   (4) 9400 $cm^3$

5. Which of the following is the smallest?

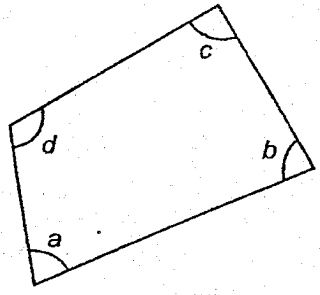
(1) 0.6

(2) 0.31

(3) 0.079

(4) 0.102

6. Which of the marked angles in the figure below is greater than a right angle?



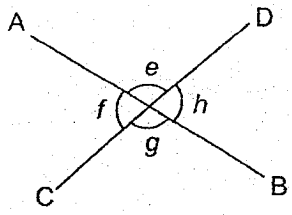

(1) $\angle a$

(2) $\angle b$

(3) $\angle c$

(4) $\angle d$

7. In the figure below, AB and CD are straight lines.




Which of the following statements is true?

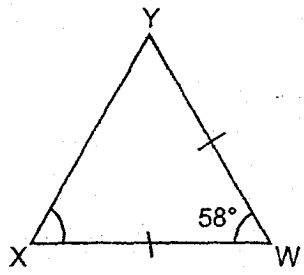
(1) $\angle e = \angle g$

(2) $\angle f = \angle e$

(3) $\angle f + \angle h = 180°$

(4) $\angle e + \angle g = 180°$

8. The figure below shows an isosceles triangle WXY. $\angle YWX = 58°$.




Find $\angle WXY$.

(1) 64°

(2) 61°

(3) 58°

(4) 32°

9. Simplify the expression $9y + 7 - 5y + 3$.

(1) $14y + 4$

(2) $4y - 10$

(3) $4y + 4$

(4) $4y + 10$

10. Express 4.2 as a percentage.

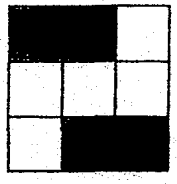
(1) 4.2%

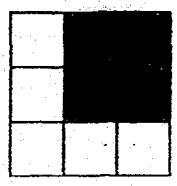
(2) 42%

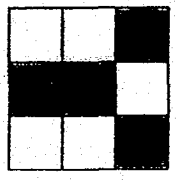
(3) 420%

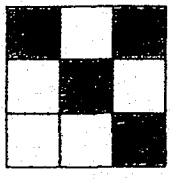
(4) 4200%

11. Which of the following is **not** a symmetric figure?

(1) 

(2) 

(3) 

(4) 

12. Suzy had some apples. $\frac{2}{5}$ of them were green and the rest were red. She sold all the green apples and $\frac{1}{4}$ of the red apples. What fraction of the apples were sold?

(1) $\frac{3}{20}$

(2) $\frac{11}{20}$

(3) $\frac{13}{20}$

(4) $\frac{14}{20}$

13. Mrs Yong wanted to pack 72 oranges and 96 apples into as many bags as possible with no remainder. She packed the same number of fruit in each bag. The number of apples in each bag was the same. How many oranges were there in each bag?

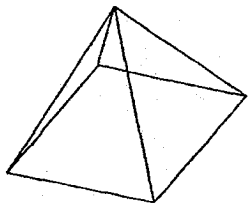
(1) 24

(2) 7

(3) 3

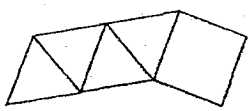
(4) 4

14. The figure below shows a pyramid.

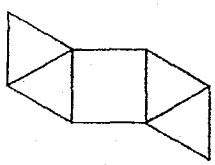


Which of the following is **not** a net of the pyramid?

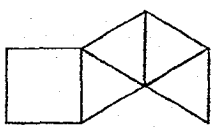
(1)



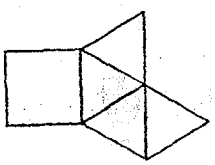
(2)



(3)

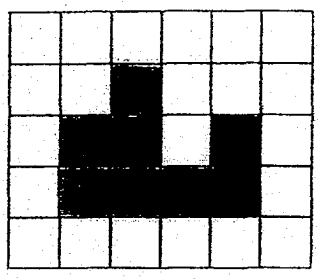


(4)

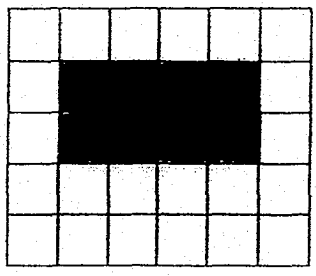


15. The diagrams below show three different views of a solid that is made up of 12 unit cubes.

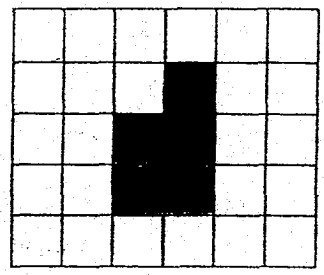
Front View



Top View

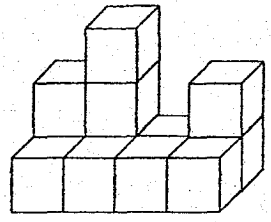


Side View

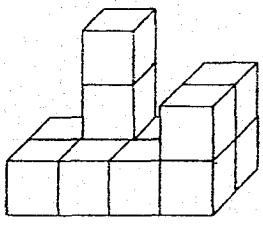


Which of the following solid matches the three views?

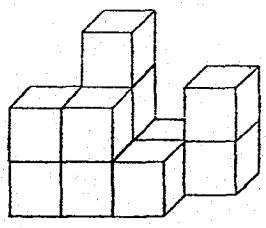
(1)



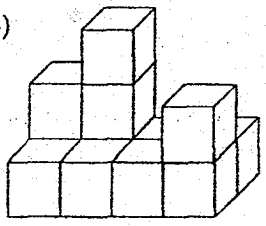
(2)



(3)



(4)



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. What is the missing number in the box?

$6 : 15 = \boxed{\ ?\ } : 55$

Answer: _____

17. Find the value of $35 - 2 \times (3 + 4) + 6$.

Answer: _____

18. Find the value of $\frac{3}{7} \div 9$.

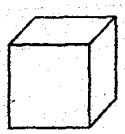
Answer: _____

19. Find the value of $\frac{42 - 3y}{6} + 8$ when $y = 4$.

Answer: _____

SCORE

20. Find the volume of the cube shown below.




Answer: _____ $cm^3$

Do not write in this space

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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)

---

21. Find the value of

(a) $20.7 \times 1000$

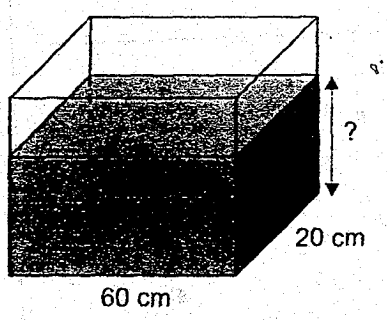
(b) $8.06 \div 20$

Answer: (a) _____

(b) _____

---

22. The base of a rectangular container is 60 cm long and 20 cm wide. Peter poured 36 000 $cm^3$ of water into the container. What is the height of the water level?




Answer: _____ cm

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SCORE



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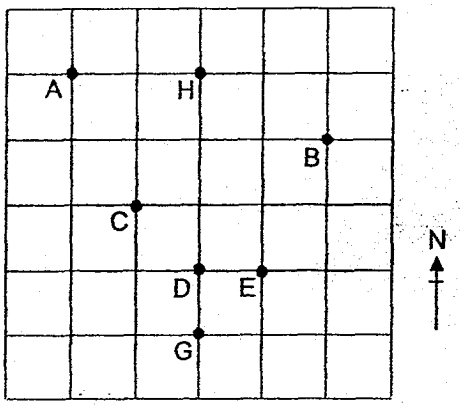
23. Seven landmarks are shown in the square grid below.




(a) In which direction is A from E?

(b) A treasure is buried under one of the landmarks. The treasure is south of H and south-west of B. Under which landmark is the treasure buried?

Answer: (a) _____

(b) _____

---

24. The ratio of the number of boys to the number of girls in a hall is 2 : 7. There are 180 children. Find the difference between the number of boys and the number of girls.

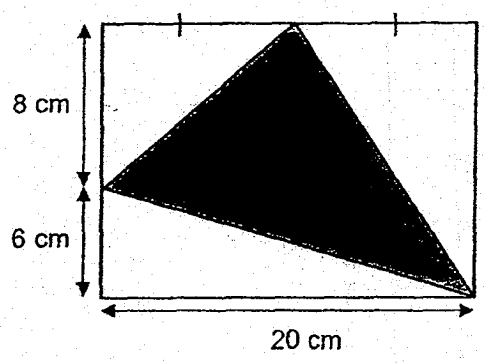
Answer: _____

---

SCORE

25. The figure below shows a rectangle and a triangle. What is the area of the shaded triangle?

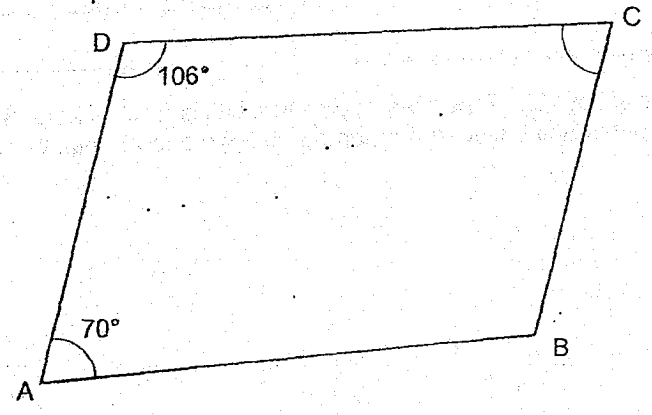
Do not write in this space




Answer: _____ $cm^2$

---

26. ABCD is a trapezium. $\angle DAB = 70°$. $\angle ADC = 106°$.




(a) Name the pair of parallel sides of the trapezium.

(b) Find $\angle BCD$.

Answer: (a) _____

(b) _____ °

---

SCORE

27. A table with 4 columns is filled with numbers in a certain pattern. The first 4 rows of the table are shown below.

| | Column A | Column B | Column C | Column D |
|---|---|---|---|---|
| Row 1 | 1 | 2 | 3 | 4 |
| Row 2 | 8 | 7 | 6 | 5 |
| Row 3 | 9 | 10 | 11 | 12 |
| Row 4 | 16 | 15 | 14 | 13 |
| ⋮ | ⋮ | ⋮ | ⋮ | ⋮ |

In which row and column will the number 295 appear?

Answer: Row: _____

Column: _____

---

28. One machine took 80 minutes while another took 100 minutes to print the same number of copies of a newsletter. In 80 minutes, the faster machine printed 360 more copies of the newsletter than the slower one. What was the total number of copies printed by the two machines?

Answer: _____

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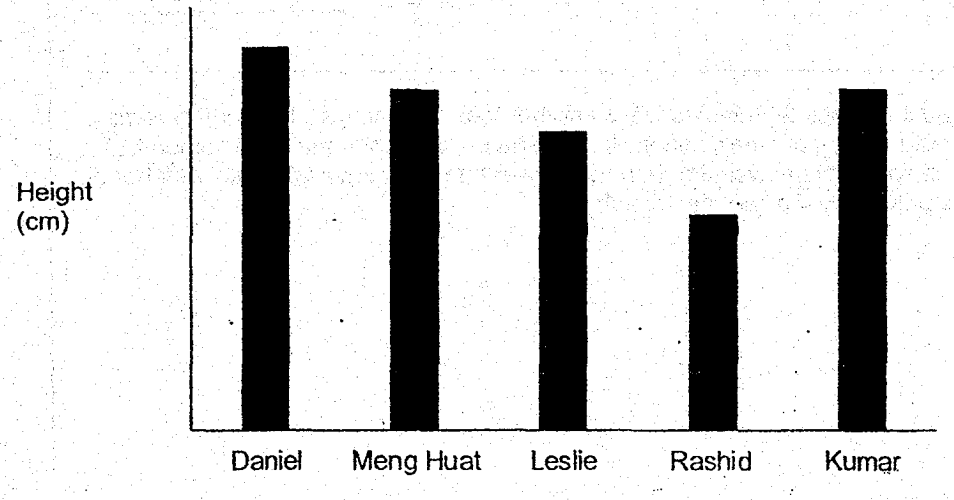
SCORE

29. Siva saves $3 a day during weekdays and $6 a day on Saturday and Sunday. He started saving on Friday, 8 June. How many days did he take to save $69?

Do not write in this space

Answer: _____

30. The bar graph below shows the height of 5 boys.




Based on the information above, put a tick (✓) in the correct box.

| | | True | False | Not possible to tell |
|---|---|---|---|---|
| (a) | Leslie's height is less than Rashid's height. | | | |
| (b) | The average height of the 5 boys is more than Rashid's height but less than Daniel's height. | | | |

**End of Paper**

SCORE

Set by : Mrs Agnes Chua, Mr Tan Keng Hock and Mr Stanley Soh

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# PEI CHUN PUBLIC SCHOOL

## PRELIMINARY EXAMINATION, 2018

## MATHEMATICS

## PAPER 2

**Time: 1 h 30 min**

Name : _____ (  )

Class : Primary 6 /_____

Date : 1 August 2018

Parent's Signature:_____

| | |
|---|---|
| Paper 1 (Booklet A) | 20 |
| Paper 1 (Booklet B) | 25 |
| Paper 2 | 55 |
| TOTAL | 100 |

**INSTRUCTIONS TO CANDIDATES**

DO NOT OPEN THIS BOOKLET 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 and write your answers in the spaces provided. For questions which require units, give your answers in the units stated. (10 marks)

Do n
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1. There are 4032 people at a concert hall. $\frac{2}{7}$ of the people are females.
How many females are there in the concert hall?

Answer: _____

2. The average height of 4 boys is 1.36 m. The height of one of the boys is 1.45 m.
What is the average height of the other 3 boys?

Answer: _____ m

SCORE

3. There were 13 bookshelves each holding the same number of books.
1 bookshelf was removed and the books on the shelf were placed on the remaining 12 shelves. Because of this, the number of books on each remaining shelf increased by 8.
What was the total number of books in the 13 bookshelves at first?

Do not write in this space

Answer: _____

---

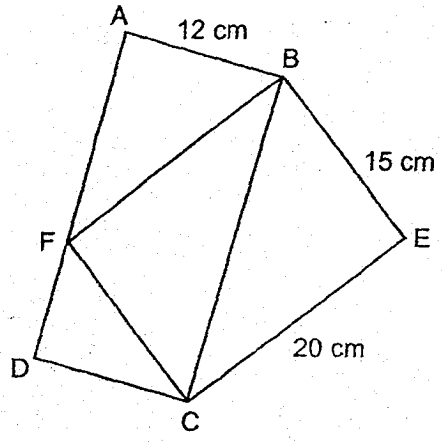
4. The breadth of a rectangle is $b$ cm. The length of the rectangle is 3 times its breadth. What is the perimeter of the rectangle?
Express your answer in terms of $b$.

Answer: _____ cm

---

SCORE

5. In the figure below, ABCD and BECF are rectangles. The length of CE is 20 cm, the length of BE is 15 cm and the length of AB is 12 cm.
What is the length of AD?

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Answer: _____ cm

SCORE

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)

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6. Zainal and Marc saved a total of $193. Suresh and Marc saved a total of $100. Zainal saved 4 times as much money as Suresh. How much did Marc save?

Answer: _____ [3]

7. The mass of a watermelon is 640 g more than the mass of a durian.
The mass of a jackfruit is twice the mass of a watermelon.
The total mass of the three fruits is 8.72 kg.
What is the mass of the jackfruit?

Answer: _____ [3]

SCORE

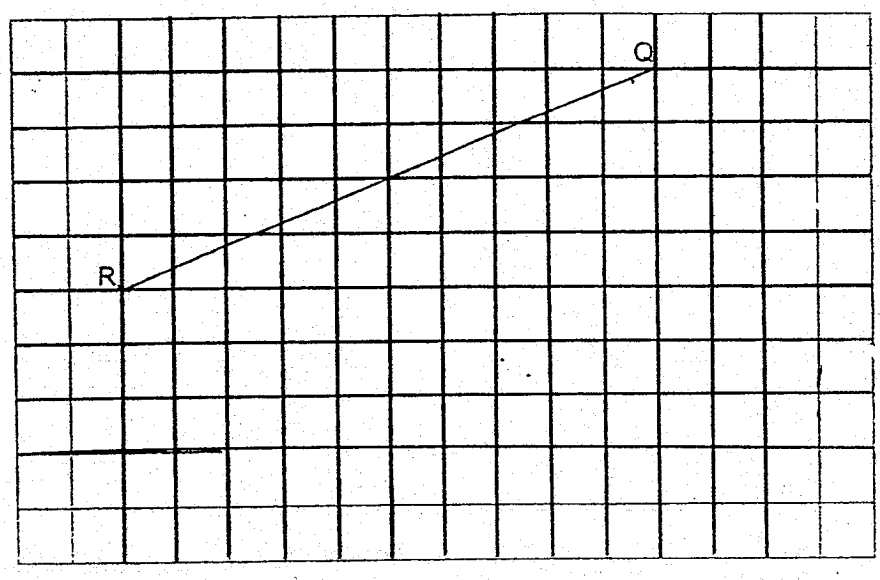
8. In the square grid below, QR is a side of a trapezium.

(a) Measure the length of QR.

(b) Draw a trapezium PQRS in the square grid such that:
(i) ∠RQP is a right angle;

Do not writ in this spac

8(b)




Answer: (a) _____ [1]

9. At first, the ratio of Leon's savings to Michael's savings was 9 : 7. After each of them donated $680 to charity, the ratio of Leon's savings to Michael's savings became 5 : 2. What was Michael's savings at first?

Answer _____ [3]

SCORE

10. Kai Ling wanted to buy a present for her parents with her savings. She started saving from the beginning of January. The line graph below shows her savings at the end of each month.

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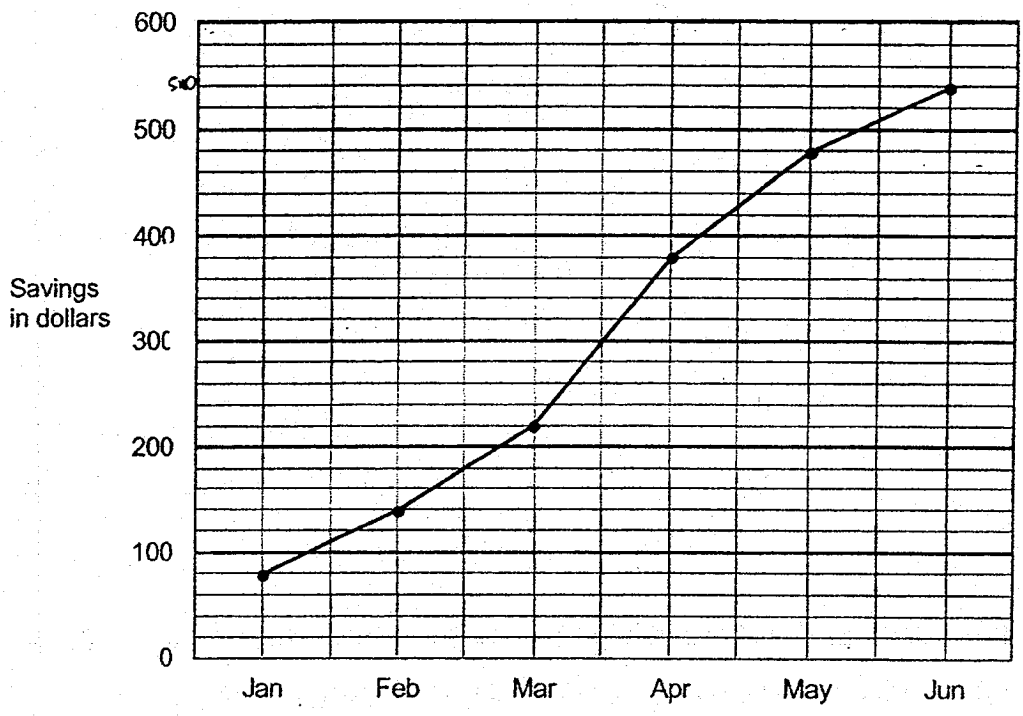



(a) In which month did Kai Ling save the most? How much did she save that month?

(b) At the end of June, Kai Ling realised she had not saved enough for the present. She only managed to save $\frac{3}{4}$ of the amount she needed. What was the amount she needed for the present?

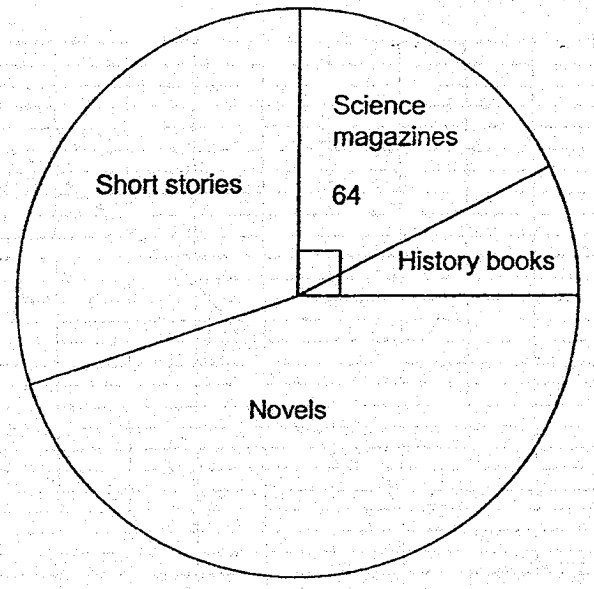
Answer: (a) Month : _____ [1]

Amount : _____ [1]

(b) _____ [2]

SCORE

11. There are 360 Primary 6 pupils in a primary school. The pie chart shows the type of books the Primary 6 pupils like to read. 64 pupils like to read Science magazines.




(a) What fraction of the pupils like to read short stories or novels?

(b) What percentage of the pupils like to read Science magazines?

(c) The ratio of the number of pupils who like to read short stories to the number of pupils who like to read novels is 2 : 3.
What percentage of the pupils like to read novels?

Answer: (a) _____ [1]

(b) _____ [1]

(c) _____ [2]

Do not
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SCORE

12. At a shop, a mobile phone was sold at 40% the price of a television. Both items were sold at a 20% discount. Janet paid $2016 for both items after the discount. What was the usual price of the television?

Do not write in this space

Answer: _____ [3]

SCORE

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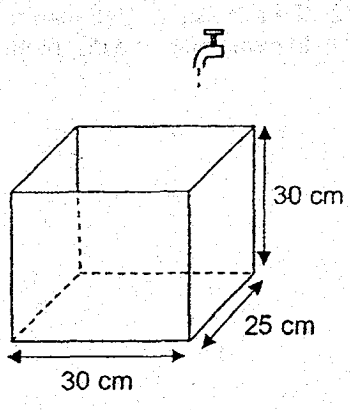
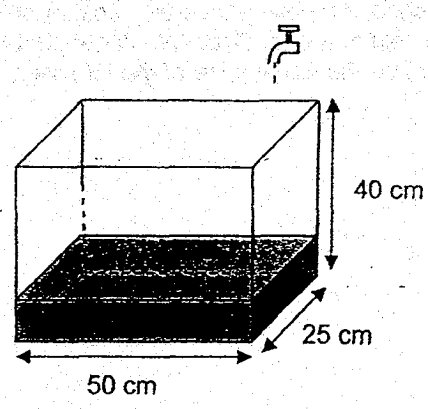
13. Two rectangular tanks are shown below.




**Tank A**




**Tank B**

At first, Tank A was empty and $\frac{1}{4}$ of Tank B was filled with water. Both taps were turned on at the same time and water from both taps flowed at the same rate of 1.5 litres per minute.

How long did it take for the height of water to be the same in both tanks?
(1 litres = 1000 $cm^3$)

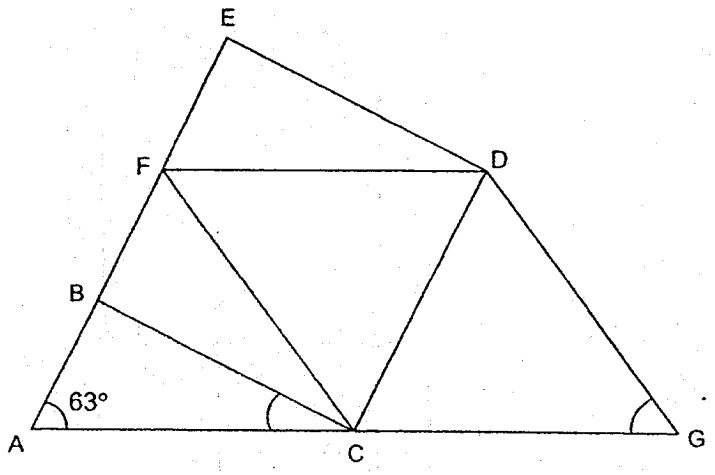
**Ans** _____ [3]

SCORE

14. The figure below is not drawn to scale. ABFE and ACG are straight lines. BCDE is a square and CFDG is a rhombus. $\angle BAC = 63°$.

(a) Find $\angle ACB$.

(b) Find $\angle CGD$.




Answer: (a) _____ [2]

(b) _____ [3]

Do not wri
in this spac

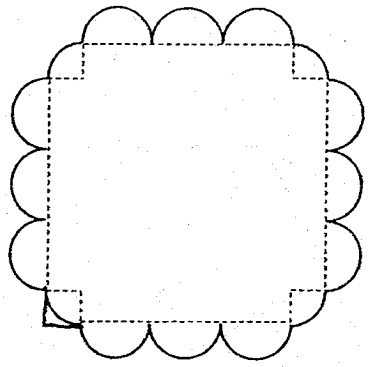
SCORE

15. The figure shows a table mat. The outside edge of the mat is formed by 12 semicircles and 4 quarter circles, each of radius 10 cm.

(a) Find the perimeter of the mat.

(b) Find the area of the mat.

Take $\pi = 3.14$.



Do not write in this space

Answer: (a) _____ [2]

(b) _____ [3]

SCORE

Do not write in this space

16. Raja and Greg took part in a walkathon which started at 7.20 a.m. Raja's average speed was 30 m/min faster than Greg. When Raja completed the walkathon in 40 minutes, Greg had only walked $\frac{5}{6}$ of the distance.

(a) What time was it when Greg completed the walkathon?

(b) Find Raja's average speed for the walkathon in m/min.

Answer: (a) _____ [2]

(b) _____ [2]

SCORE

17. Lee Peng and Janice had some red and yellow ribbons. $\frac{4}{9}$ of Lee Peng's ribbons were red, while $\frac{1}{3}$ of Janice's ribbons were red. Lee Peng gave $\frac{3}{4}$ of her red ribbons to Janice.

In the end, Lee Peng had 126 ribbons left and $\frac{6}{11}$ of Janice's ribbons were red.

(a) How many red ribbons did Lee Peng give Janice?

(b) How many ribbons did Janice have in the end?

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Answer: (a) _____ [2]

(b) _____ [3]

**End of Paper**

Set by : Mrs Agnes Chua, Mr Tan Keng Hock and Mr Stanley Soh

SCORE

# ANSWER KEY

YEAR : 2018
LEVEL : PRIMARY 6
SCHOOL : : PEI CHUN PUBLIC
SUBJECT : : MATHEMATICS
TERM : PRELIMINARY EXAMINATION

Paper 1

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

Q16 22

Q17 27

Q18 $\frac{1}{21}$

Q19 13

Q20 729 $cm^3$

Q21 (a) 20700

(b) 0:403

Q22 30 cm

Q23 (a) North-west

(b) D

Q24 100

Q25 110 $cm^2$

Q26 (a) DA and CB

(b) 74°

Q27 Row : 74
Column : 8

Q28 3600

Q29 17 days

Q30 (a) False

(b) True

Paper 2

Q1 $\frac{1}{7} \rightarrow 4032 \div 7 = 576$

Females $\rightarrow 576 \times 2 \Rightarrow$ 1152

Q2 Total $\rightarrow 1.36 \times 4 = 5.44$
3 boys $\rightarrow 5.44 - 1.45 = 3.99$
Average $\rightarrow 399 \div 3 \Rightarrow$ 1.33 m

Q3 1 shelf $\rightarrow 8 \times 12 = 96$
13 shelves $\rightarrow 96 \times 13 \Rightarrow$ 1248 books

Q4 Length $\rightarrow b \times 3 = 3b$
Perimeter $\rightarrow 3b + 3b + b + b \Rightarrow 8b$ cm

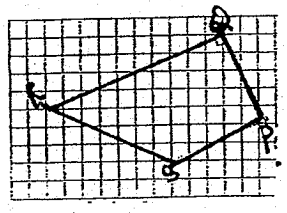
Q5 Area $\rightarrow 20 \times 15 = 300$
$300 \div 2 = 150$
$150 \times 2 = 300$
AD $\rightarrow 300 \div 12 \Rightarrow$ 25 cm

Q6 $2 + M \rightarrow 193$
$S + M \rightarrow 100$
1 unit $\rightarrow 93 \div 3 = 31$
$100 - 31 \Rightarrow$ $69

Q7 $8.72 + 0.64 = 9.36$
$9.36 \div 4 = 2.34$
$2.34 \times 2 \Rightarrow \underline{4.68 \text{ kg}}$

Q8 (a) 8.6 cm

(b)



Q9

| L : M | L : M |
|---|---|
| 9 : 7 | 5 : 2 |
| 27 : 21 | 10 : 4 |

$21 - 4 = 17$
$17u = 680$
$1u = 680 \div 17 = 40$
$M \rightarrow 40 \times 21 \Rightarrow \underline{\$840}$

Q10 (a) $\text{Feb} \rightarrow 140 - 80 = 60$
$\text{Mar} \rightarrow 220 - 140 = 80$
$\text{Apr} \rightarrow 380 - 220 \Rightarrow \$160$
Month : <u>April</u>
Amount : <u>$160</u>

(b) $\text{Total} \rightarrow 60 + 80 + 160 + 100 + 60 = 460$

$\frac{3}{4} \rightarrow 460 + 80 = 540$

$\frac{1}{4} \rightarrow 540 \div 3 = 180$

$\frac{4}{4} \rightarrow 180 \times 4 \Rightarrow \underline{\$720}$

Q11 (a) $1 - \frac{1}{4} \Rightarrow \frac{3}{4}$

(b) $\frac{64}{360} \times 100 \Rightarrow 17\frac{7}{9}\%$

(c) $360 - 90 = 270$
$270 \div 5 = 54$
$54 \times 3 = 162$

$\frac{162}{360} \times 100 \Rightarrow \underline{45\%}$

Q12 $80\% \rightarrow 2016$
$100\% \rightarrow 2016 \div 80 \times 100 = 2520$
$140\% \rightarrow 2520$
$100\% \rightarrow 2520 \div 140 \times 100 \Rightarrow \underline{\$1800}$

Q13 <u>Tank A</u>
Height $\rightarrow 1500 \div (30 \times 25) = 2$ cm
Diff $\rightarrow 2 - 1.2 = 0.8$
$10 \div 0.8 \Rightarrow \underline{12.5 \text{ min}}$

<u>Tank B</u>
Height $\rightarrow 1500 \div (50 \times 25) = 1.2$ cm

Q14 (a) $\angle ABC = 180° - 90° = 90°$
$\angle ACB = 180° - 90° - 63° \Rightarrow \underline{27°}$

(b) $\angle DCG = 180° - 90° - 27° = 63°$
$\angle CGD = 180° - 63° - 63° \Rightarrow \underline{54°}$

Q15 (a) D → 10 x 2 = 20

Semi → $\frac{1}{2}$ x 3.14 x 20 = 31.4

12 semi → 31.4 x 12 = 376.8

Quar → $\frac{1}{4}$ x 3.14 x 20 = 15.7

4 quar → 15.7 x 4 = 62.8

Perimeter → 62.8 + 376.8 ⇒ <u>439.6 cm</u>

(b) 2 small rectangles → 60 x 10 x 2 = 1200
80 x 60 = 4800
31.4 x 10 x 10 x 7 = 2198
Total → 2198 + 1200 + 4800 ⇒ <u>8198 $cm^2$</u>

Q16 (a) 8:08 am

(b) 150 + 30 ⇒ <u>180 m/min</u>

Q17 (a) 6u → 126
1u → 126 ÷ 6 = 21
21 x 3 ⇒ <u>63 red ribbons</u>

(b)

| <u>J Before</u> | <u>J After</u> |
|---|---|
| R : Y | R : Y |
| 1 : 2 | 12 : 10 |
| 5 : 10 | |

7u = 63
22u = 63 ÷ 7 x 22 ⇒ <u>198 ribbons</u>