PEI CHUN PUBLIC SCHOOL

PRELIMINARY EXAMINATION, 2015

MATHEMATICS

PAPER 1

(BOOKLET A)

Additional materials: Optical Answer Sheet (OAS) **Total Time For Booklets A & B : 50 min**

Name : _____

Class : Primary 6

Date : 14 August 2015

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. Round off 32 875 to the nearest hundred.

   (1) 32 870

   (2) 33 880

   (3) 32 900

   (4) 33 000

2. Express 4 kg 7 g in grams.

   (1) 4700 g

   (2) 4007 g

   (3) 470 g

   (4) 47 g

3. Which of the following is equal to 9.025?

   (1) $9\frac{2}{5}$

   (2) $9\frac{1}{25}$

   (3) $9\frac{25}{1000}$

   (4) $9\frac{25}{100}$

4. Which value does the digit 7 in 5 721 049 stand for?

   (1) 700

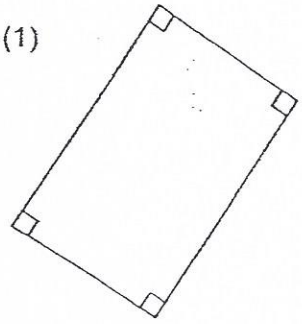
   (2) 7000

   (3) 70 000

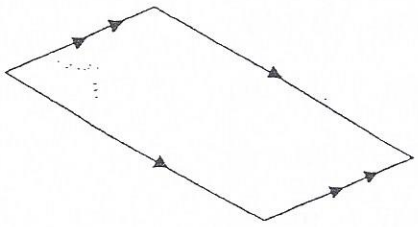
   (4) 700 000

5. Which of the following shapes is a rhombus?

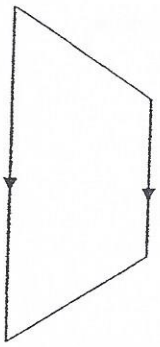
(1)



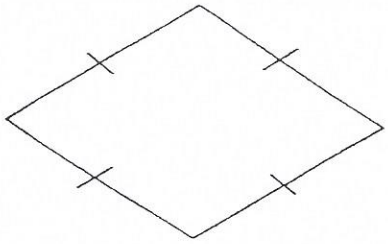
(2)



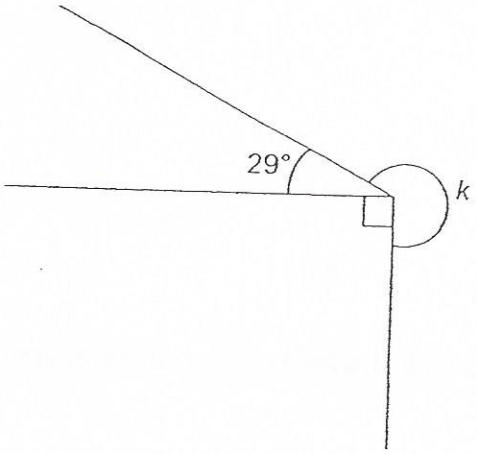
(3)



(4)



6. Study the figure below.



Find $\angle k$.

(1) 119°

(2) 241°

(3) 270°

(4) 331°

7. Simplify the expression $14 + 7g - 5 + 3g$.

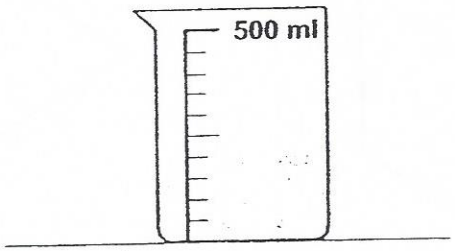
(1) $9 + 4g$

(2) $9 + 10g$

(3) $19 + 4g$

(4) $19 + 10g$

8. A container is filled with some water as shown below.



How much **more** water is required to fill the container to 500 ml?

(1) 100 ml

(2) 200 ml

(3) 300 ml

(4) 400 ml

9. Which of the following fractions is smaller than $\frac{5}{6}$ but larger than $\frac{1}{2}$?

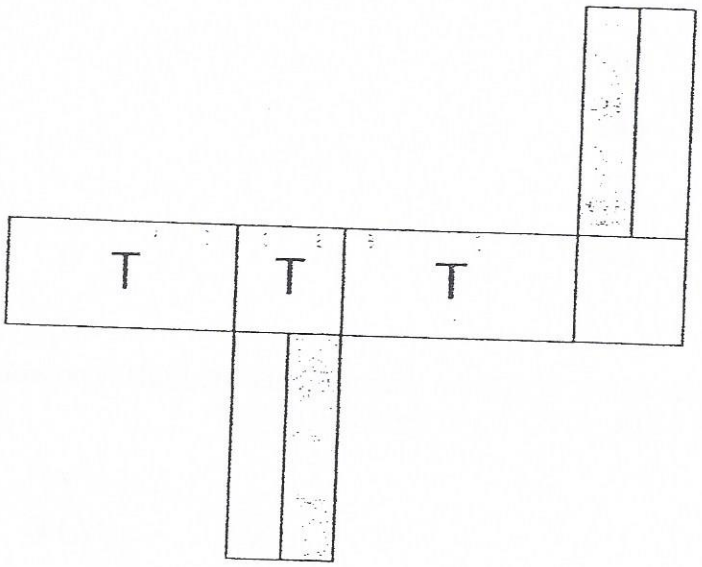
(1) $\frac{11}{12}$

(2) $\frac{7}{14}$

(3) $\frac{15}{24}$

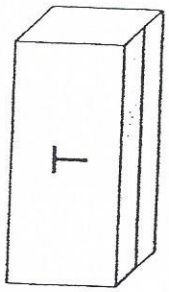
(4) $\frac{12}{25}$

10. The net of a cuboid has patterns on some of the faces as shown in the figure below, while the other side of the net is white.

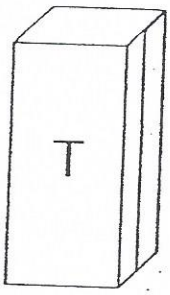


Which of the following is the cuboid that is formed by the net above?

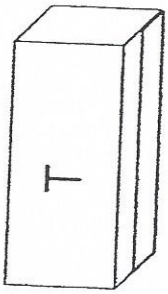
(1)



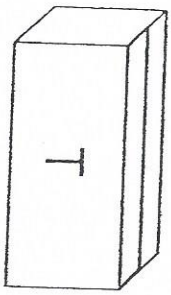
(2)



(3)



(4)



11. Julian has 154 stickers. If he gives 72 stickers to his sister, the number of stickers his sister has will increase by 9%. How many stickers do they have altogether?

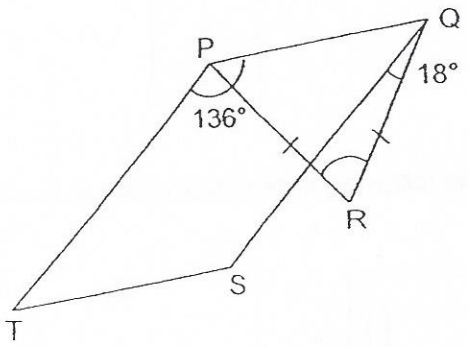
(1) 800

(2) 882

(3) 954

(4) 1026

12. In the figure, PQST is a parallelogram and PQR is an isosceles triangle. PR = QR, $\angle TPQ = 136°$ and $\angle SQR = 18°$.



Find $\angle PRQ$.

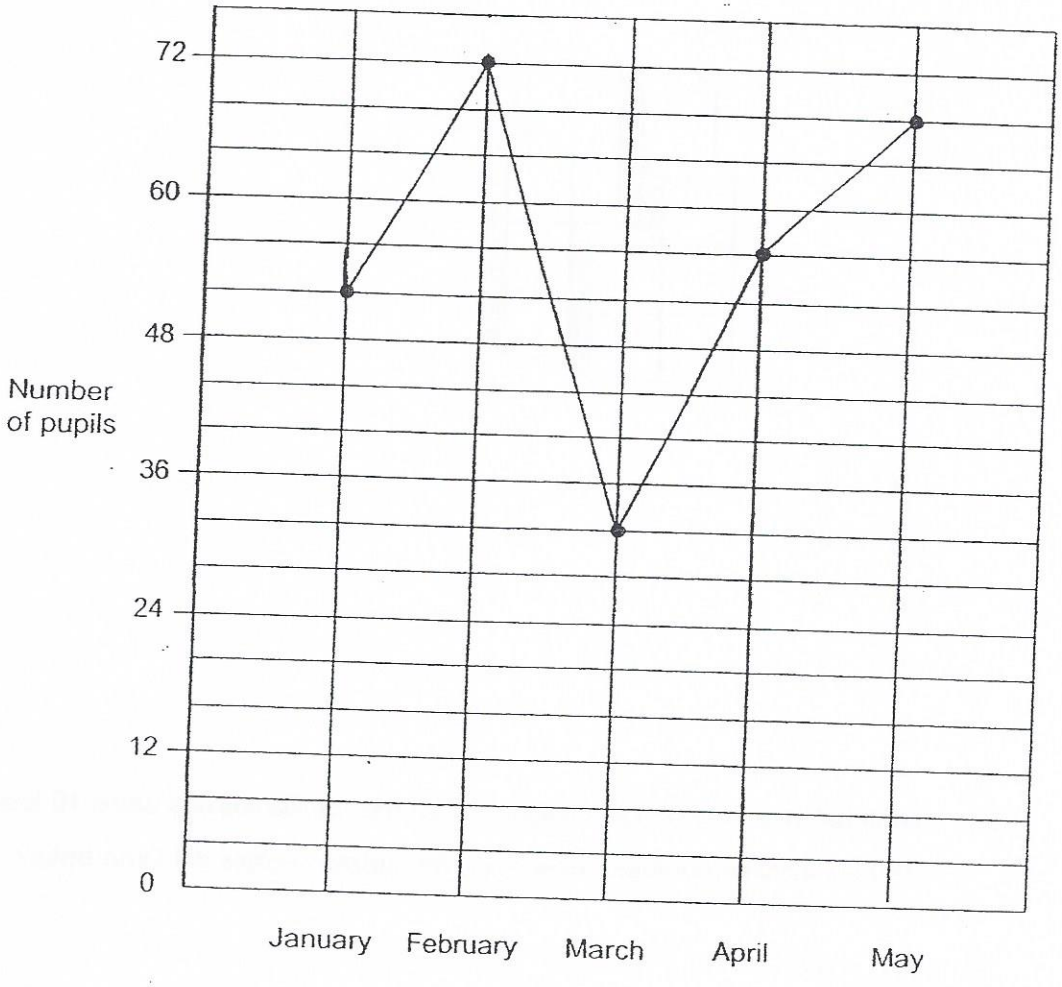
(1) 56°

(2) 62°

(3) 74°

(4) 92°

13. The line graph below shows the number of pupils who joined a Mathematics workshop from January to May.



From January to May, the number of boys who joined the workshop was $\frac{3}{5}$ of the number of girls. What was the number of boys who joined the workshop during that period?

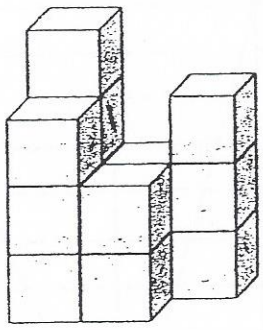
(1) 35

(2) 105

(3) 168

(4) 280

14. The solid figure is made up of 14 cubes that are glued together. The whole solid, including the base, is then painted yellow. How many cubes have **three** of their faces painted yellow?



(1) 7

(2) 6

(3) 5

(4) 4

15. Dina baked a total of 130 cookies. $\frac{1}{2}$ of the vanilla cookies were 10 less than $\frac{1}{3}$ of the chocolate cookies. How many chocolate cookies did Dina bake?

(1) 60

(2) 66

(3) 86

(4) 90

PEI CHUN PUBLIC SCHOOL

PRELIMINARY EXAMINATION, 2015

MATHEMATICS

PAPER 1

(BOOKLET B)

Total Time For Booklets A & B : 50 min

Name : _____

Class : Primary 6

Date : 14 August 2015

/20

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 **NOT** ALLOWED TO USE A CALCULATOR.

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)

Do not w in this sp

16. What is the value of $\frac{3z-6}{2}$ when $z = 8$?

Answer: _____

17. List out all the common factors of 18 and 24.

Answer: _____

18. What is the value of 800 × 30?

Answer: _____

19. Sue started her piano lesson at 2.40 p.m. and ended her lesson at 4.05 p.m. How long was her piano lesson in h and min?

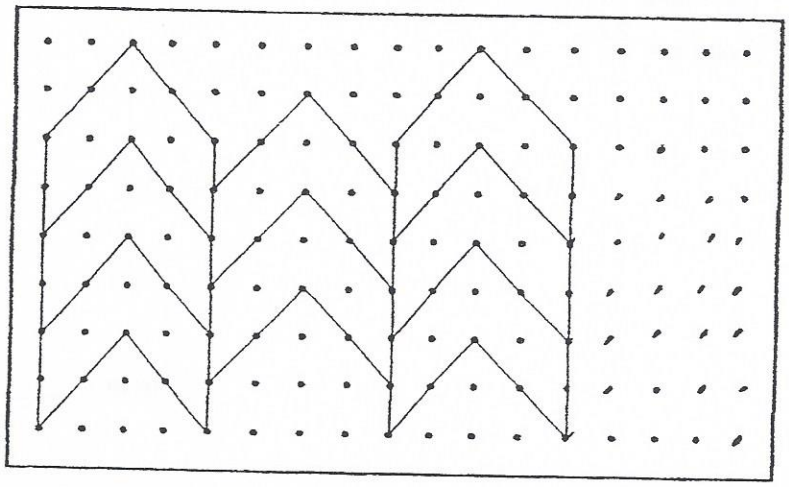
Answer: _____ h _____ min

SCORE

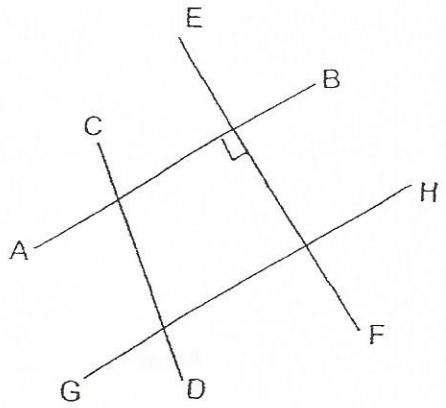
20. What is the value of 12.16 ÷ 4?

Answer: _____

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



22. Which line is perpendicular to line AB?



Answer: _____

SCORE

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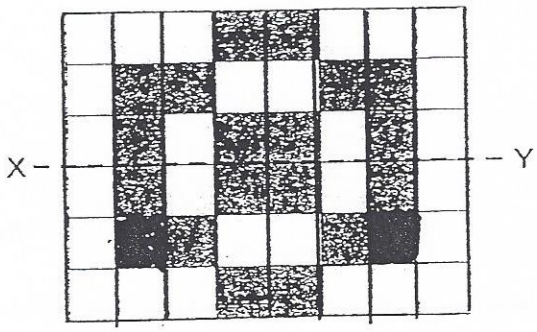
23. Shade **two** more squares to form a symmetric figure with XY as the line of symmetry.



24. The radius of a circle is 28 cm. Find its circumference.
(Take $\pi = \frac{22}{7}$)

Answer: _____ cm

25. Find the value of $\frac{5}{6} \div 3$.

Answer: _____

SCORE

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)

Do not write in this space

26. Dave read $\frac{3}{7}$ of a book last week. He read the remaining 108 pages this week. How many pages did Dave read altogether?

Answer: _____

27. To make a nut mixture, Kate used 2 cups of walnuts for every 3 cups of almonds. She also used 4 cups of almonds for every 5 cups of peanuts. If she used 60 cups of peanuts, how many cups of walnuts did she use to make the nut mixture?

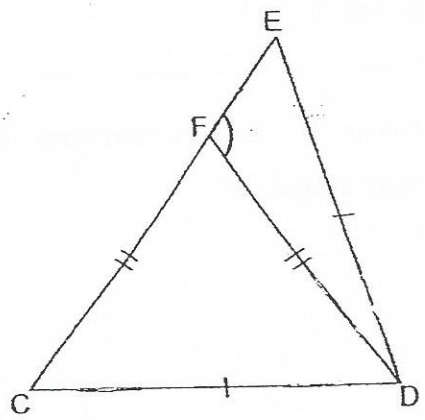
Answer: _____

28. Ali paid $51 for 6 concert tickets. How much must he pay for 10 concert tickets?

Answer: $ _____

SCORE

29. In the figure below, CDE and CDF are isosceles triangles. ∠DCF is three times as large as ∠EDF. Find ∠DFE.



Answer: _____ °

30. Mrs Leng has some sweets. If she gives each of her pupils 7 sweets, the last pupil will only have 2 sweets. If she gives to the same number of pupils 4 sweets each, she will have 73 sweets left. How many pupils does Mrs Leng have?

Answer: _____

End of Paper

SCORE

Do not w
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PEI CHUN PUBLIC SCHOOL

PRELIMINARY EXAMINATION, 2015

MATHEMATICS

PAPER 2

Time: 1 h 40 min

Name : _____

Class : Primary 6

Date : 14 August 2015

Parent's Signature: _____

Paper 1 (Booklet A)	20
Paper 1 (Booklet B)	20
Paper 2	60
TOTAL	100

INSTRUCTIONS TO CANDIDATES

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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 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)

Do n
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1. Randy paid $y for 8 pencils and 5 rulers. Each ruler cost $1.20. How much did each pencil cost?

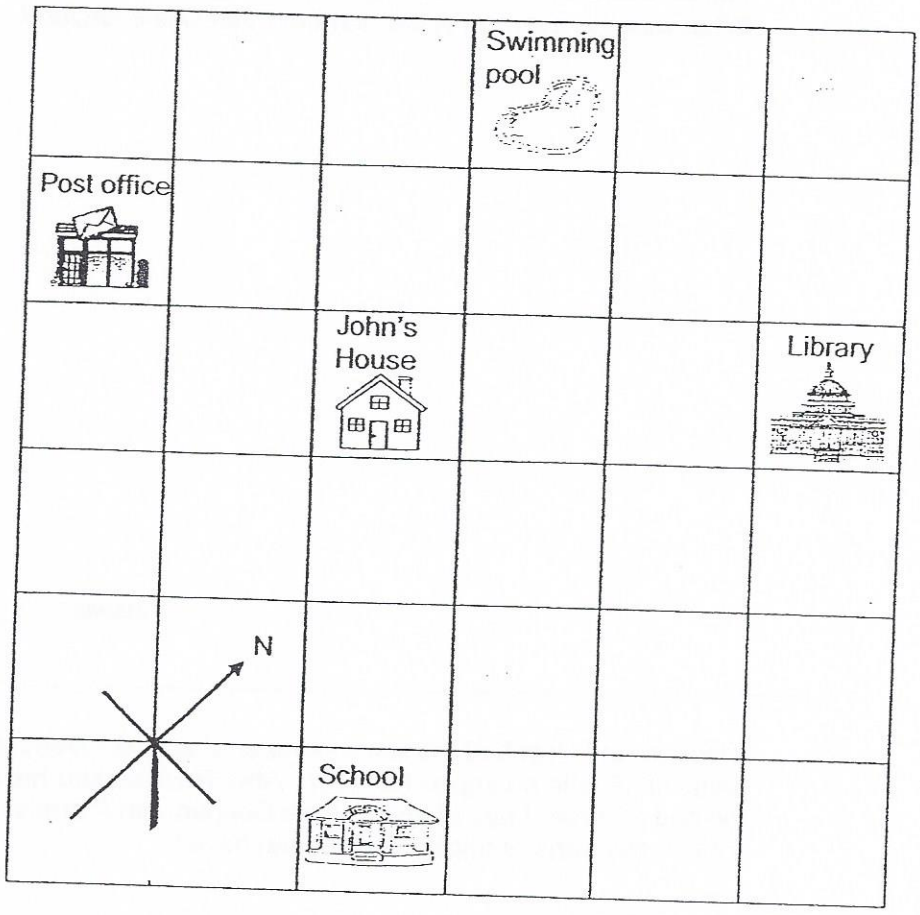
Answer: $ _____

2. Dolly mixed 0.34 ℓ of syrup with 2 ℓ 80 ml of water to make a drink. She poured the drink equally into 4 empty bottles. How many millilitres of the drink were there in each bottle?

Answer: _____ ml

3. The square grid shows the map around John's house.

Do not write in this space



(a) In which direction is the school from John's house?

Answer: _____

(b) Based on the square grid above, fill in the blanks with John's house, library, school, post office or swimming pool.

The _____ is east of the _____

_____

SCORE

4. Chloe wrote down all the whole numbers from 100 to 130. She circled those numbers whose sum of the digits is 3.
What was the average of the numbers that Chloe circled?

Answer: _____

5. Deepan and Ravi had the same number of apples. Deepan packed his apples into bags of 18 with no apples left over. After Ravi packed his apples into bags of 14, he had 11 more bags of apples than Deepan with 2 apples left over.
How many bags of apples did Deepan have?

Answer: _____

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)

Do not w
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6. In a canteen, the ratio of the number of boys to the number of girls was 4 : 3. $\frac{1}{2}$ of the boys left the canteen. 60 pupils stayed behind.

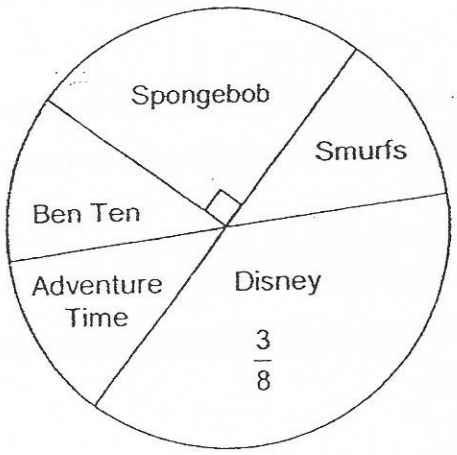
(a) What was the ratio of the number of boys to the numbers of girls in the canteen in the end?

(b) How many pupils were in the canteen at first?

Answer: (a) _____ [1]

(b) _____ [2]

7. The pie chart shows the favourite cartoons of 400 children. The same number of children chose Ben Ten, Adventure Time or Smurfs as their favourite cartoon.



(a) What was the ratio of the number of children who chose Spongebob as their favourite cartoon to the number of children who chose Disney as their favourite cartoon?

(b) What was the total number of children who chose Spongebob or Adventure Time as their favourite cartoon?

Answer: (a) _____ [1]

(b) _____ [2]

Do not w
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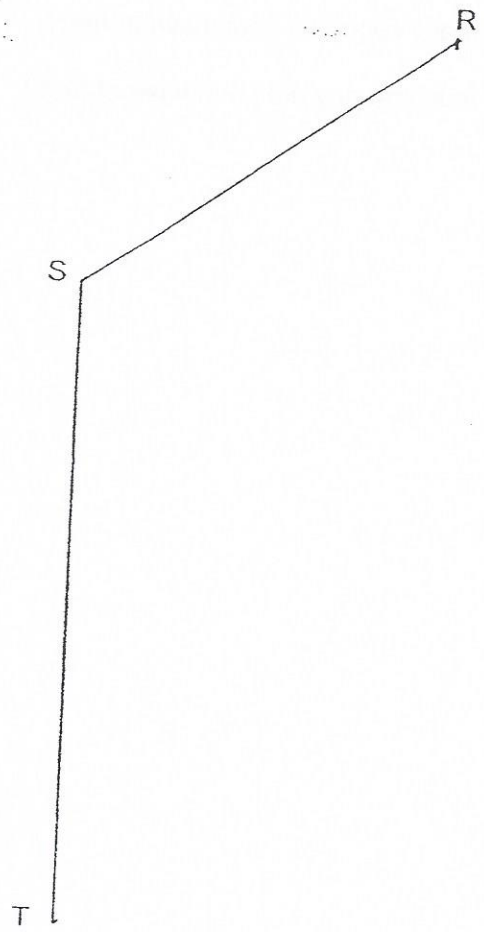
8. The figure shows two sides of a parallelogram, RS and ST.

Do not write in this space



(a) Measure and write down the size of $\angle RST$.

(b) Draw the parallelogram by completing the figure above. [2]

Answer: (a) _____ [1]

9. Leon had some 50¢ coins and Mike had some 20¢ coins. They had a total of 185 coins. After they spent an equal number of coins, Leon had 45 coins fewer than Mike.

(a) How many coins did Leon have at first?

(b) How much money did Leon have at first?

Do not writ
in this spac

Answer: (a) _____ [2]

(b) _____ [1]

10. In March, Siew Leng was given a monthly allowance of $250. She spent 50% of it on food and transport and 20% of it on books and saved the rest. In April, the monthly allowance increased. Siew Leng was able to increase her spending on books by 30% and spent another 10% more on food and transport compared to the month of March. She saved the same amount of money for both months.

Do not write in this space

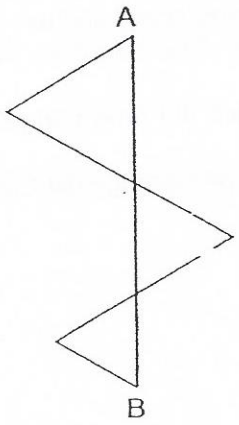
(a) How much did Siew Leng spend on books in April?

(b) By what percentage did the monthly allowance increase?

Answer: (a) _____ [1]

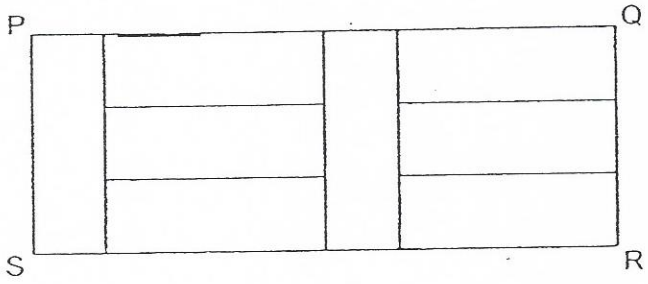
(b) _____ [3]

11. (a) A piece of wire is bent into a shape that is made up of 3 equilateral triangles as shown below. The length of AB is 18 cm.



What is the length of the wire?

(b) Rectangle PQRS is made up of 8 identical rectangles and has a perimeter of 297 cm.



What is the length of PQ?

Answer: (a) _____ [2]

(b) _____ [2]

Do not w
in this sp

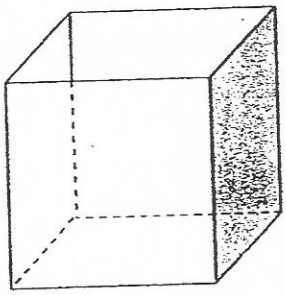
12. Tasty Cake Shop baked some pies. $\frac{3}{7}$ of them were apple pies and the rest were chicken pies. After selling $\frac{2}{3}$ of the apple pies and 253 chicken pies, the shop had $\frac{1}{6}$ of the pies left. How many pies did Tasty Cake Shop sell?

Do not write in this space

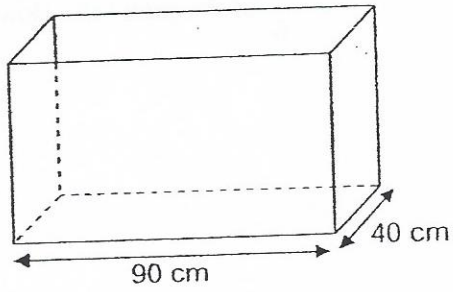
Answer: _____ [4]

SCORE

13. A cubical Container A with a base area 3600 cm^2 was completely filled with water. After 25% of the water in Container A was poured into an empty Container B, Container B was $\frac{2}{7}$ filled with water.



Container A



Container B

(a) How much water was poured from Container A into Container B?

(b) What was the height of Container B?

Answer: (a) _____ [2]

(b) _____ [2]

SCORE

(Go on to the next page)

Do not v
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14. There is a total of 1036 goats and ducks in a farm. $\frac{2}{9}$ of the number of goats is equal to $\frac{3}{5}$ of the number of ducks.

(a) How many goats are there on the farm?

(b) $\frac{1}{6}$ of the goats are sold. Express the number of goats remaining in the farm as a fraction of the number of ducks in the farm. Express the fraction in its simplest form.

Do not write in this space

Answer: (a) _____ [2]

(b) _____ [2]

15. Zainal took 15 hours to drive from town R to town S. Che Lun took 12 hours to drive from town S to town R. The difference in their average speeds was 12.8 km/h.

(a) What was Che Lun's average speed?

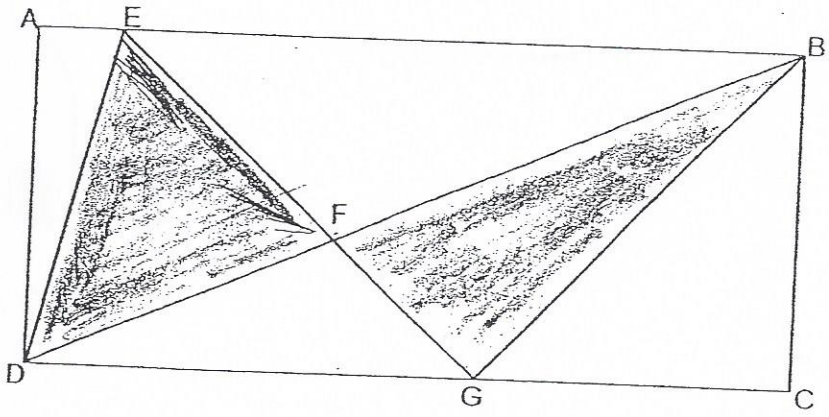
(b) What was the distance between town R and town S?

Answer: (a) _____

(b) _____

Do not v
in this sp

16. The figure below shows a rectangle ABCD. EFG and DFB are straight lines. The area of rectangle ABCD is 960 cm^2 and the total area of triangles DEF and BFG is 336 cm^2. The ratio of length DG to the length GC is 7 : 5. What is the area of the triangle DFG?



Do not write in this space

Answer: _____ [4]

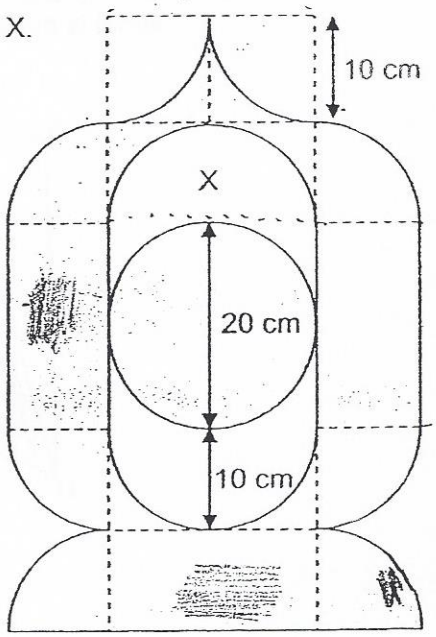
Do not
in this

17. The figure below is made up of 1 circle, 3 identical rectangles and 12 identical quarter circles of radius 10 cm.

(a) Find the perimeter of the unshaded part, X.

(b) Find the total area of the shaded parts.

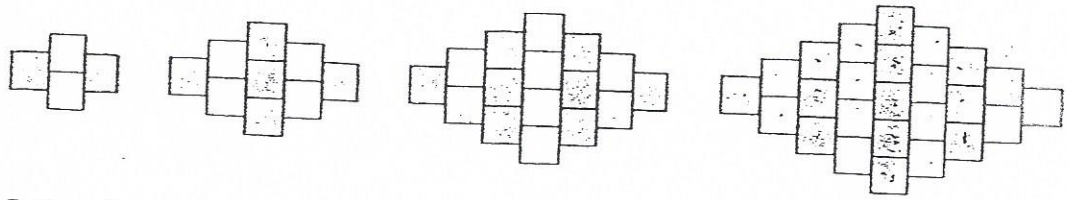
(Take $\pi = 3.14$)



Answer: (a) _____ [2]

(b) _____ [3]

18. Zach used some white and grey tiles to form some patterns. The first four patterns are shown below.



Pattern 1 Pattern 2 Pattern 3 Pattern 4

The table below shows the number of white and grey tiles used to form the patterns.

Pattern Number	Number of grey tiles	Number of white tiles	Total number of tiles
1	2	2	4
2	5	4	9
3	8	8	16
4	13	12	25
5			

(a) Complete the table above for Pattern 5. [1]

(b) How many tiles were used to form Pattern 80?

(c) How many grey tiles were used to form Pattern 120?

Answer: (b) _____ [2]

(c) _____ [2]

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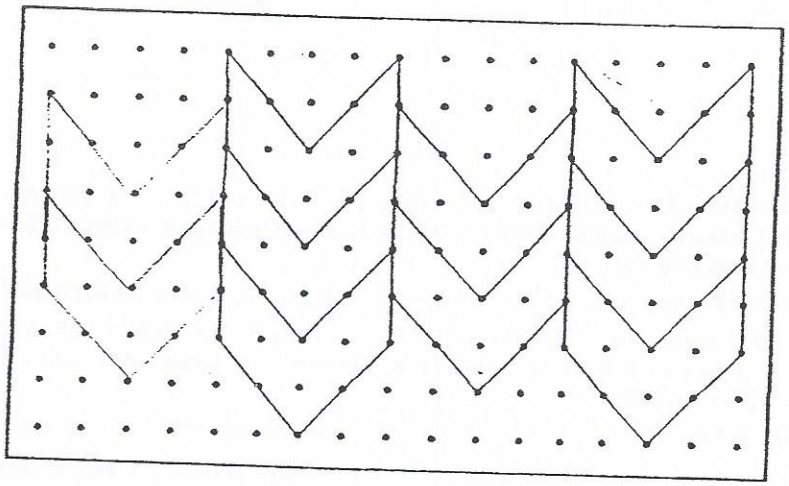
EXAM PAPER 2015
LEVEL : PRIMARY 6
SCHOOL : PEI CHUN PUBLIC SCHOOL
SUBJECT : MATHS
TERM : PRELIMINARY EXAMINATION

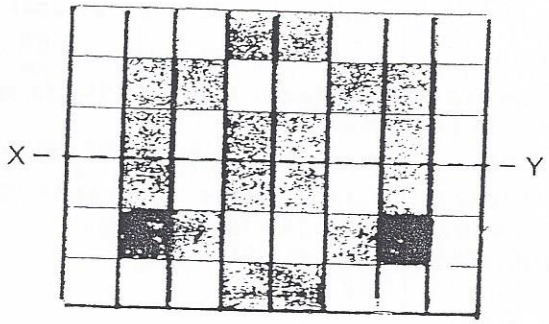
PAPER ONE

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

Q16. 9 → 32 = 24, $\frac{24-6}{2} = 9$
Q17. 1,2,3,6 Q18. 24,000 → 800 x 30 = 24,000
Q19. 1 hr 25 min Q20. 3.04 **Q21. . SEE PICTURE**



Q22. **EF** **Q23 SEE PICTURE** Q24. 176cm → 28 x 2 = 56, $\frac{22}{7}$ x 56 = 176

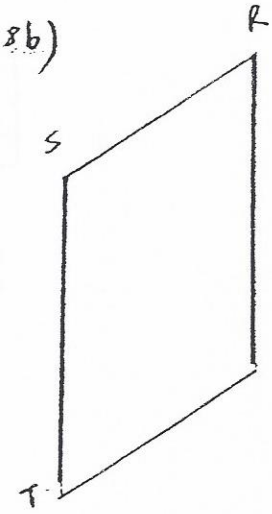


Q25. $\frac{5}{18}$ → $\frac{5}{6} x \frac{1}{3} = \frac{5}{18}$ Q26. 189 → 108 ÷ 4 = 27, 27 x 7 = 189
Q27. 32→ 60 ÷ 5 = 12, 12 x 4 = 48, 48÷3 = 16, 16 x 2 = 32
Q28. $85 → 51 ÷ 6 = 8.50, 8.50 x 10 =85
Q29. 108° → 4U+3U+3U=10U,1U=180°÷10=18°,3U=18°X3=54°,1U=18°,$\angle DFE = 180° - 18° - 54° = 108°$
Q30. 26 → Total difference = 73 +5=78, 1 Group difference = 7 – 4 = 3, Pupil = 78 ÷ 3 = 26.

PAPER 2

Q1. $\$\frac{y-6}{8}$ → 5 rulers = 1.20 x 5 = 6 , 8 pencils = $Y – 6, 1 pencil = $\$\frac{y-6}{8}$
Q2. 605ml. → 0.34L = 340ml, 2L80ml = 2080ml, 1 bottle = $\frac{2080+340}{4} = 605$

Q3.a. South East Q3b. The **library** is east of the **swimming pool**.
Q4. 111 → Average = 102 + 111 + 120 ÷ 3 = 111
Q5. 39 → D 18 ;18, R 14:18, Difference 4 : 4 , Individual difference = 18 – 14 = 4,
Total difference = 11 x 14 + 2 = 156, Deepan has 156 ÷ 4 = 39.
Q6a. 2 : 3 → B : G : T, 4 : 3 : 7, 2 : 3: 5, Q6b. 84 → 5U = 60, 1U = 60 ÷5 = 12, 7U = 12 X 7= 84
Q7a. 2:3 → 5 : D, 2 : 3 , Q7b. 150 → Adventure time = $\frac{4}{8} - \frac{3}{8} = \frac{1}{8}$, $Adventure\ time = \frac{1}{8}$ x 400 = 50,
Spongebob = $\frac{1}{4}$ x 400 = 100, 100 + 50 = 150.
Q8a. 125° **Q8b. SEE PICTURE**



Q9a. 70 → 185 – 45 = 140, 140 ÷ 2 = 70, Q9b. $35 → Leon at first = 70 x 0.50 = 35
Q10a. $65→March : Books = 20% x 250 = 50, food and transport = 50% x 250 = 125, April = 100%+30%=130%
Books = 130% x 50 = 65
Q10b. 11% → March save = $\frac{10}{10} - \frac{5}{10} - \frac{2}{10} = \frac{3}{10}, \frac{3}{10}\ x\ 250 = 75\ 9\ save)\ march\ and\ april, April = Books = 50\%,$
F + T = 60% , Now books = 10.30 x 50 = 150 = 65, Now F + T = 10.10 x 125+125 = 137.5
Q11a. 54 → 18 x 3 = 54, Q11b. 108cm → Total units =22, 1 unit = 297 ÷ 22 = 13.5, PQ = 8U,
8 unit = 13.5 x 8 = 108.
Q12. 385 → Pies → $\frac{3}{7}$ → $\frac{2}{3} x \frac{3}{7} = \frac{2}{7} → \frac{3}{2}\ x\ \frac{2}{2} = \frac{1}{7}$ → $chicken → 1 - \frac{3}{7} = \frac{4}{7}, sold = 1 - \frac{1}{6} = \frac{5}{6},$
Chicken pies sold = $\frac{5}{6}\ x\ \frac{2}{7} = \frac{23}{42}, total = \frac{253}{23}\ x\ 42 = 462, sold = \frac{5}{6}\ x\ 462 = 385$
Q13a. 54litre → Water in A = 60 x 60 x 60 = 21,6000, $\frac{1}{4}\ x\ 216000 = 54{,}000 = 54litre$
Q13b. 52.5cm → $\frac{2}{7}\ of\ B = 54\ 000, \frac{1}{7}\ of\ B = 54\ 000\ \div 2 = 27\ 000, \frac{7}{7}$ of B = 27 000 x 7 = 189 000,
Base area of B = 90 x 40 = 3600, Height = 189 000 ÷ 3600 = 52.5
Q14a. 156 → G → $\frac{2}{9} = \frac{6}{27}$, $D → \frac{3}{5} = \frac{6}{10}$, $Total\ units = 27 + 10 = 37, Goat = \frac{1036}{37}$ x 77 = 156
Q14b. $\frac{9}{4}$ → $1 - \frac{1}{6} = \frac{5}{6}, goats\ remaining = \frac{5}{6}\ x\ 750 = 630, fraction = \frac{630}{280} = \frac{9}{4}$
Q15a. 64km/h →more = 12.8 x 12 = 153.6, Z speed = 153.6 ÷ 3 = 51.2, CL speed = 51.2 + 12.8 =64.
Q15b. 768km → Distance = 64 x 12 = 768km
Q16. 112cm² → $\Delta\ DEG + \Delta\ DBG = \frac{7}{12}\ x\ 960 = 560, \quad \Delta\ DFG = \frac{560-336}{2} = 112$
Q17a. 82.8 → 3.14 x 20 = 62.8, 62.8 ÷ 2 = 31.4, Perimeter = 31.4 + 31.4 + 10 + 10 = 82.8
Q17b. 1514cm² → Area = 12 x 10 x 10 + 3.14 x 10 x 10 =1514cm².
Q18a. SEE PICTURE . Q18b. 6561 → tiles = 81 X 81 = 6561
Q18c. 7321 → Grey tiles = 121 x 121 + 1 ÷ 2 = 7321

18 The table below shows the number of white and grey tiles used to form the patterns

Pattern Number	Number of grey tiles	Number of white tiles	Total number of tiles
1	2	2	4
2	5	4	9
3	8	8	16
4	13	12	25
5	18	18	36