Preliminary Examination 2017
Primary 6 Mathematics

Name: _____ _____ Register No. _____

Class: Pr 6 -_ _____ ___

Date: 22nd August 2017 Parent's Signature: _____

Total Time for Booklets A and B : 50 minutes

PAPER 1
(Booklet A)

Instructions to Pupils:

1. Do not open this booklet until you are told to do so.
2. Follow all instructions carefully.
3. Shade your answers in the Optical Answer Sheet (OAS) provided.
4. You are **not** allowed to use a calculator.
5. Answer all questions.

Section	Maximum Mark	Marks Obtained
Paper 1 (Booklet A)		

*** This booklet consists of 8 printed pages (including this cover page).**

Questions 1 to 10 carry 1 mark each. Questions 11 to 15 carry 2 marks each. For each question, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the oval (1, 2, 3 or 4) on the Optical Answer Sheet.
All diagrams in this paper are not drawn to scale unless stated otherwise.

(20 marks)

1. Round off 813.094 to the nearest hundredth.

   (1) 813.09
   (2) 810 10
   (3) 800
   (4) 813

2. Which of the following is eight hundred and eight thousand and eighteen in figures?

   (1) 808 018
   (2) 818 080
   (3) 880 018
   (4) 880 080

3. Find the value of $11y - 5 + 7y$ when $y = 4$.

   (1) 11
   (2) 21
   (3) 67
   (4) 70

4. Which one of the following fractions is equal to $4\frac{6}{7}$?

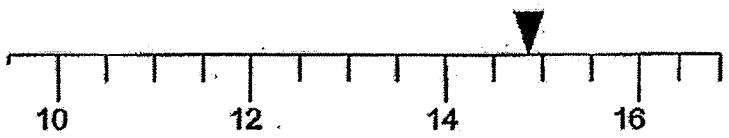
(1) $\frac{17}{7}$

(2) $\frac{24}{7}$

(3) $\frac{34}{7}$

(4) $\frac{46}{7}$

5. Which one of the following is the closest to the reading shown on the weighing scale below?



(1) 14.3 kg
(2) 14.8 kg
(3) 15.4 kg
(4) 15.7 kg

6. Six dollars was exchanged for 10¢ coins and 20¢ coins. There were equal number of 10¢ coins and 20¢ coins. How many 10¢ coins were there in the change?

(1) 10
(2) 15
(3) 20
(4) 30

7. Which one of the following fractions is smaller than $\frac{1}{5}$?

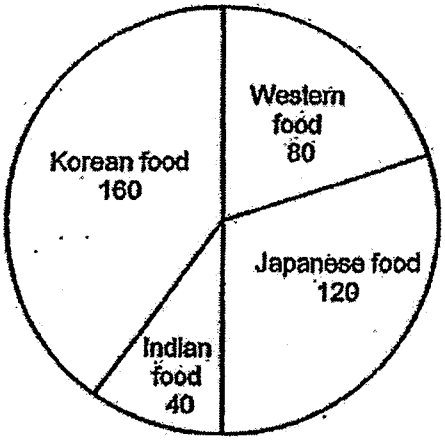
(1) $\frac{4}{20}$

(2) $\frac{5}{26}$

(3) $\frac{6}{27}$

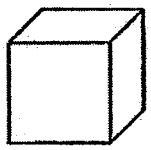
(4) $\frac{7}{33}$

8. A group of 400 children was asked what their favourite food was. The pie chart shows their choices and the number of children who chose each type of food. Which type of food was chosen by 30% of the children?



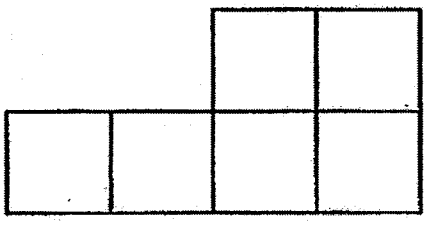
(1) Indian food
(2) Western food
(3) Japanese food
(4) Korean food

9.

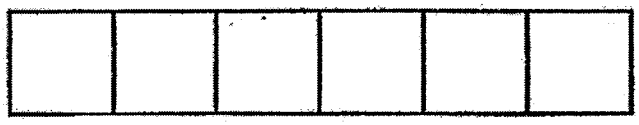


Which of the following is a net of a cube?

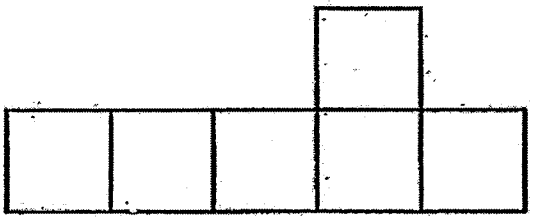
(1)



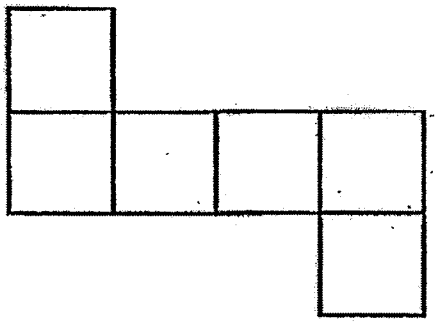
(2)



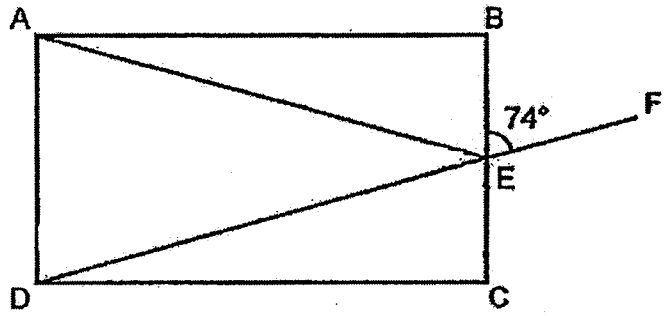
(3)



(4)



10. The figure below shows a rectangle ABCD. E is the mid-point of BC. DEF is a straight line. Find ∠AED.



(1) 16°
(2) 32°
(3) 74°
(4) 106°

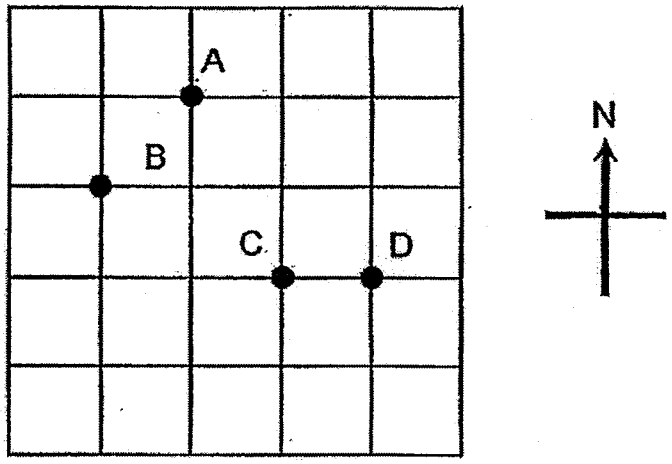
11. There were 200 erasers in a box. Tom gave some erasers to his friend and had 182 erasers left. What was the percentage decrease in the number of erasers?

(1) 9%
(2) 18%
(3) 36%
(4) 91%

12. John could type 150 words every 3 minutes. How long will he take to type an article of 2000 words?

(1) $13\frac{1}{3}$ minutes
(2) 40 minutes
(3) $133\frac{1}{3}$ minutes
(4) 400 minutes

13. Which of the following statements is <u>TRUE</u> of the diagram shown below?



(1) Town A is north-west of Town B.

(2) Town C is north-east of Town B.

(3) Town D is south-west of Town A.

(4) Town A is north-west of Town D.

14. At first, Kenny had 20 more postcards than Shan. Then, Shan gave 14 of his postcards to Kenny. Now, Kenny has 3 times as many postcards as Shan. How many postcards did Shan have at first?

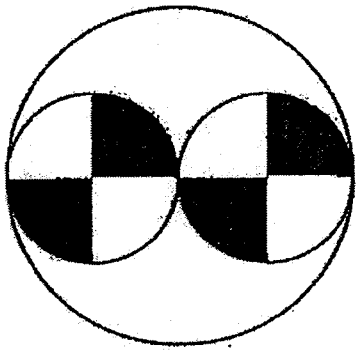
(1) 17

(2) 24

(3) 31

(4) 38

15. The figure below is made up of 2 small identical circles and a big circle. The radius of the big circle is twice the radius of one small circle. Each small circle is divided into 4 quadrants. What fraction of the big circle is shaded?



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

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

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

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

Go on to Booklet B

Preliminary Examination 2017
Primary 6 Mathematics

Name: _____ Register No._____

Class: Pr 6 _____

Date: 22nd August 2017 Parent's Signature: _____

Total Time for Booklets A and B : 50 minutes

PAPER 1
(Booklet B)

Instructions to Pupils:

1. Do not open this booklet until you are told to do so.
2. Follow all instructions carefully.
3. You are not allowed to use a calculator.
4. Answer all questions.

Section	Maximum Mark	Marks Obtained
Paper 1 (Booklet B)		

*** This booklet consists of 9 printed pages (including this cover page)**

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. ***All diagrams in this paper are not drawn to scale unless stated otherwise.***

(10 marks)

Do not write in this space

16. Find the smallest common multiple of 4 and 6.

Ans: _____

17. Find the value of $22.59 \div 30$.

Ans: _____

18. Express 9.014 as a mixed number in its simplest form.

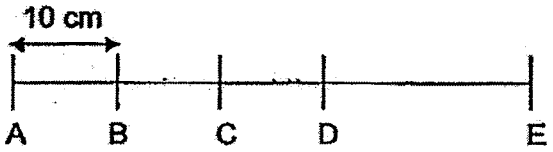
Ans: _____

19. There were 300 people at a park. 45% of the people were women. There were 120 children and the rest were men. How many men were there at the park?

Ans: _____

20. In the figure below, AB is 10 cm. B is the midpoint of AC, C is the midpoint of BD and D is the midpoint of BE. What is the length of AE?

Do not write in this space

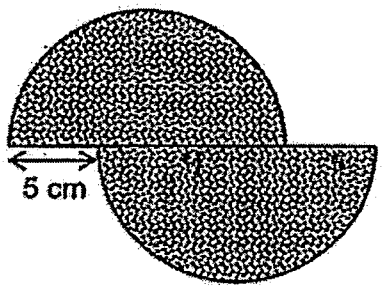


Ans: _____ cm

21. Philip was born on 9 August 1986. Oliver was born on 9 August 2000. In which year would Philip be twice as old as Oliver?

Ans: _____

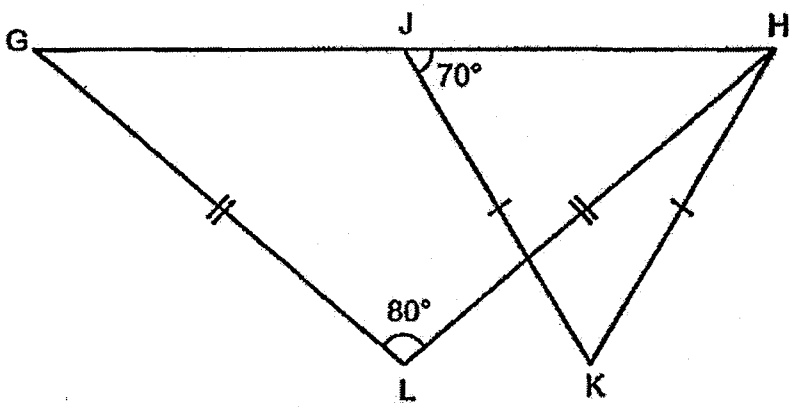
22. The figure below is made up of two identical semicircles. The radius of the semicircle is 7 cm. Find the perimeter of the figure. (Take $\pi = \frac{22}{7}$)



Ans: _____ cm

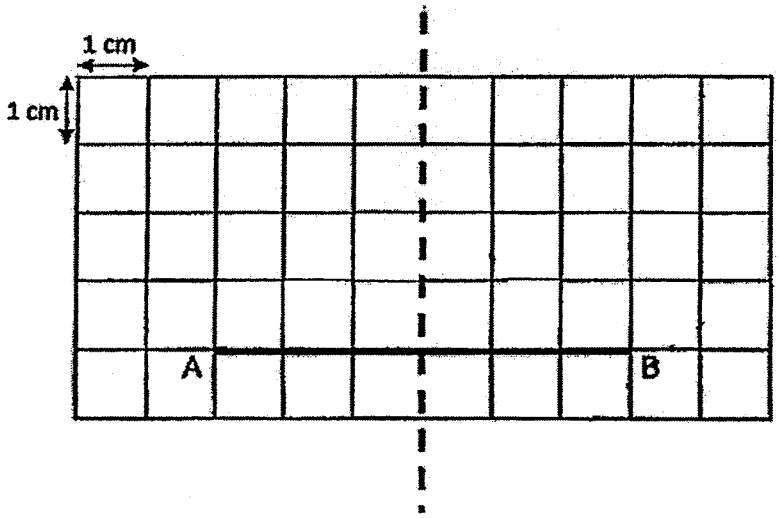
23. The figure below is made up of two triangles GHL and JHK where GL = HL and JK = HK. Given that ∠GLH = 80° and ∠HJK = 70°, find ∠LHK.

Do not write in this space



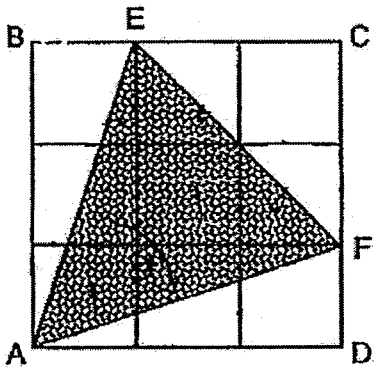
Ans: _____ °

24. The grid shown below is made up of 1-cm squares. Draw a symmetrical triangle ABC that has an area of 6 cm² using the given line of symmetry.



25. ABCD is a square whose area is 27 cm². The square is divided into 9 smaller squares of equal area. What is the area of triangle AEF?

Do not write in this space



Ans: _____ cm²

Questions 26 to 30 carry 2 marks each. Show your workings 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. ***All diagrams in this paper are not drawn to scale unless stated otherwise.***

(10 marks)

Do not write in this space

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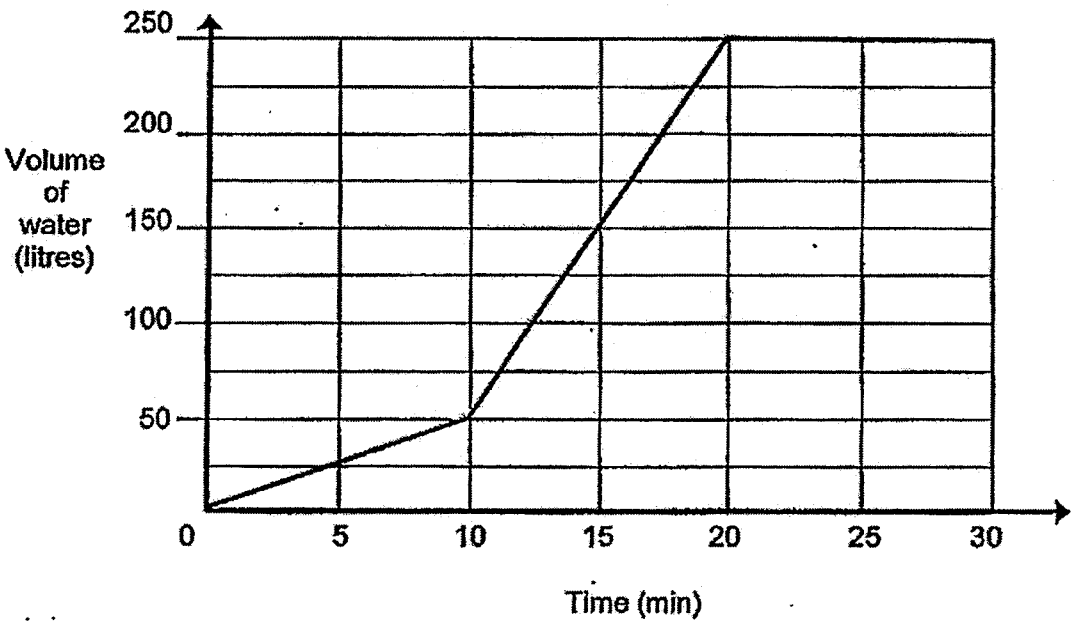
26. Annie filled a tank with water using two taps. First, she turned on Tap A. After 10 minutes, she also turned on Tap B. Both taps were turned off when the volume of water in the tank was 250 litres.

The graph below shows the amount of water in the tank during 30 minutes.



In one minute, how many litres of water flowed from Tap B?

Ans: _____ ℓ

27. Erasers are sold in packets of m erasers. Each packet is sold at \$4. Jon has \$39. How many erasers can he buy at most?

Do not write in this space

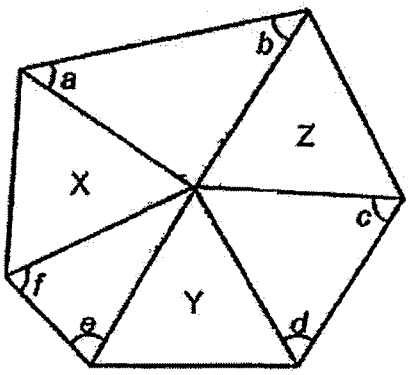
Ans: _____

28. After a discount of 20%, a shop is selling a toaster for \$64. A further \$10 discount is given when it is bought online. What was the total percentage discount given when the toaster is bought online?

Ans: _____ %

29.

Do not write in this space



The hexagon (6-sided) figure above is made up of 3 identical equilateral triangles X, Y and Z. Find the sum of $\angle a$, $\angle b$, $\angle c$, $\angle d$, $\angle e$ and $\angle f$.

Ans: _____ °

30. A total of 90 red and yellow flags are lined along a jogging track. There are at least 4 red flags between any 2 yellow flags. What is the largest possible number of yellow flags along the jogging track?

Do not write in this space

Ans: _____

End of paper. Have you checked your work?

Preliminary Examination 2017
Primary 6 Mathematics

Name: _____ Register No. _____

Class: Pr 6 - _____

Date: 22nd August 2017 Parent's Signature: _____

Time: 1 hour 40 minutes

PAPER 2

Instructions to Pupils:

1. Do not open this booklet until you are told to do so.
2. Follow all instructions carefully.
3. **Show your workings clearly** as marks are awarded for correct working.
4. Write your answers in this booklet.
5. You are allowed to use a calculator.
6. Answer all questions.

Questions	Maximum Mark	Marks Obtained
Q 1 to 5	10	
Q 6 to 18	50	

Section	Maximum Mark	Marks Obtained
Paper 1	40	
Paper 2	60	
Total	100	

*** This booklet consists of 18 printed pages (including this cover page)**

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)

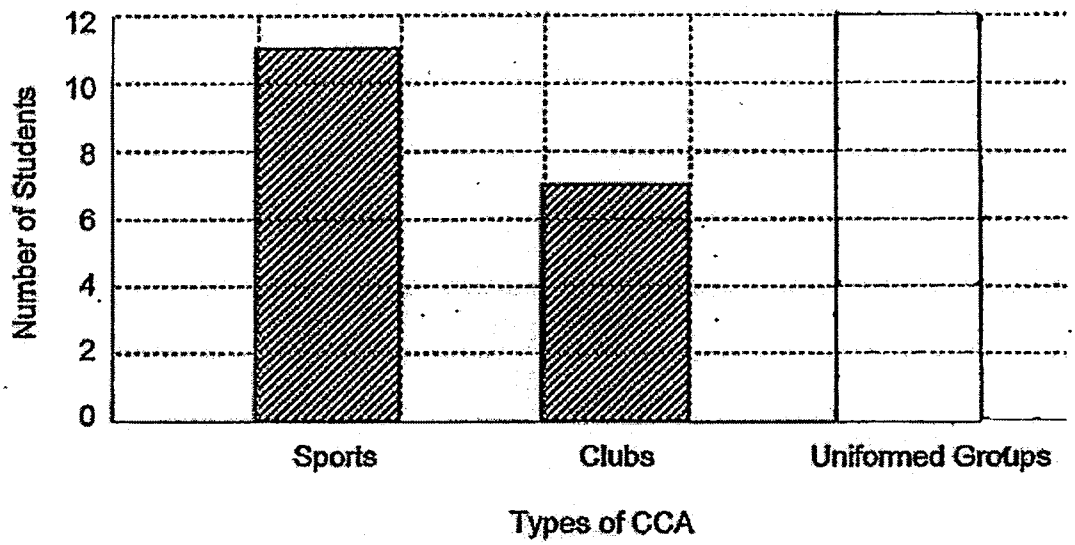
Do not write in this space

All diagrams in this paper are not drawn to scale unless stated otherwise.

1. Students in a class were grouped according to the types of CCA they had enrolled in.

Types of CCA	Sports	Clubs	Uniformed Groups
Number of students	11	7	?

Given that the number of students who enrolled in uniformed groups was 40% of the students in the class, complete the bar graph for Uniformed Groups.



Preliminary Examination 2017
Primary 6 Mathematics

Name: _____ Register No. _____

Class: Pr 6 -_____

Date: 22nd August 2017 Parent's Signature: _____

Time: 1 hour 40 minutes

PAPER 2

Instructions to Pupils:

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Questions	Maximum Mark	Marks Obtained
Q 1 to 5	10	
Q 6 to 18	50	

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Paper 2	60	
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(10 marks)

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Types of CCA	Sports	Clubs	Uniformed Groups
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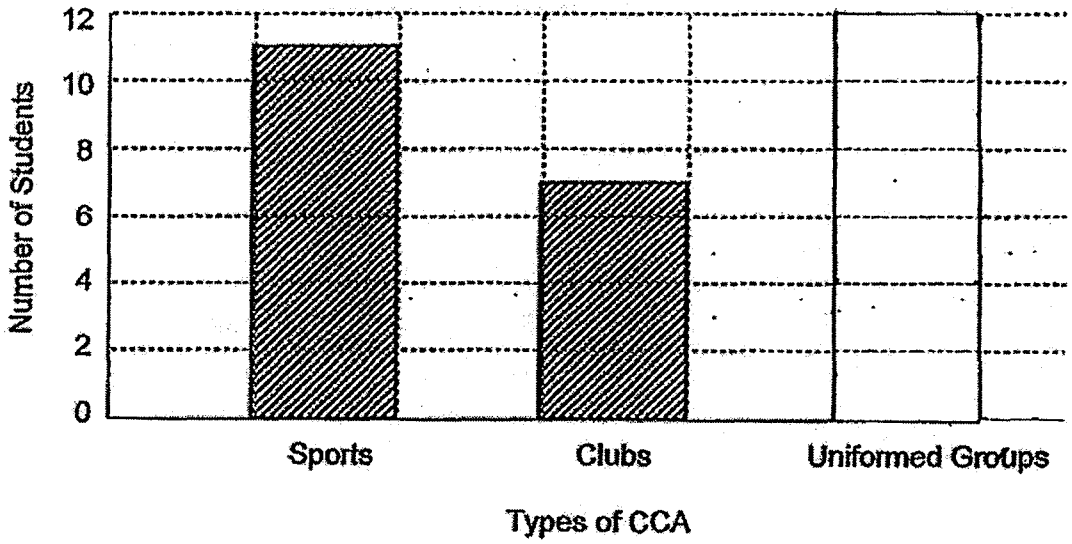
Given that the number of students who enrolled in uniformed groups was 40% of the students in the class, complete the bar graph for Uniformed Groups.

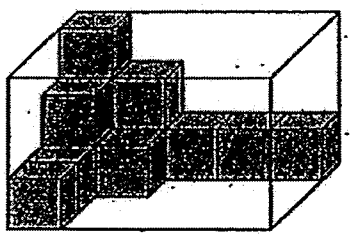


2. The ratio of the number of watches to the number of caps at a stall was 8 : 11. When 88 caps were sold, the ratio of the number of watches to the number of caps became 12 : 11. What was the number of watches at the stall?

Do not write in this space

Ans: _____

3. The figure below shows a rectangular glass box filled partly with unit cubes. How many more cubes are needed to fill this box completely with unit cubes?



Ans: _____

4. A class of 30 students were playing badminton in school. There were 4 badminton courts and the students took turns to play. They played from 8.00 a.m. to 9.30 a.m. At any time, 4 of them played at each court while the rest watched. If each student in the class had the same amount of playing time, how many minutes did each of them play?

Do not write in this space

Ans: _____ min

5. Wei Kang wrote his test scores for English, Chinese, Math and Science on a piece of paper. The maximum score for each test was 100. His average score for the 4 tests was 80. He accidentally tore part of the paper. What could be the largest difference between his Math and Science test scores?

Do not write in this space

English	Chinese	Math	Science
80	72	9	8

Ans: _____

For Questions 6 to 18, show your working clearly in the space provided for each question and write your answers in the spaces provided. The number of marks available is shown in brackets [ ] at the end of each question or part-question. For questions which require units, give your answers in the units stated.

All diagrams in this paper are not drawn to scale unless stated otherwise.

(50 marks)

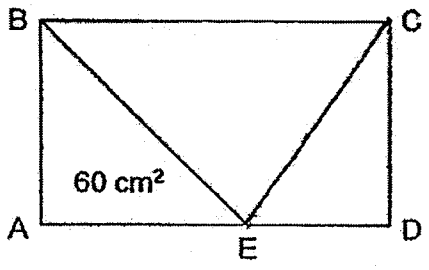
Do not write in this space

6. The average of 26 numbers is 45. When 14 more numbers are added, the average becomes 52. What is the average of the 14 new numbers?

Ans: _____ [3]

7. The figure below is a rectangle ABCD. The ratio of AE : ED = 3 : 2. The area of triangle ABE is 60 cm². Find the area of rectangle ABCD.

Do not write in this space



Ans: _____ [3]

8. Molly and Alan had a total of $160 on Monday. After Alan received $5 from his mother and Molly spent $20 on a book, Molly had $38 more than Alan. How much did Molly have at first?

Do not write in this spac

Ans: _____ [3]

9. Efron is 30 years younger than Danny. The ratio of Danny's age to Efron's age now is 8 : 3. In how many years' time will the ratio of Danny's age to Efron's age be 5 : 3?

Do not write in this space

Ans: _____ [3]

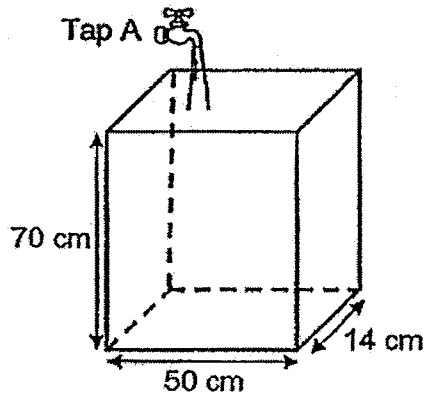
10. There were 64 more buttons in box A than box B at first. Ken then added some more buttons in box A. For every 1 button he added to box A, he removed 2 buttons from box B. The number of buttons in box B became 28 fewer than before. In the end, the ratio of the total number of buttons in both boxes to the number of buttons left in box B was 4 : 1. How many buttons were in box A at first?

Do not write in this space

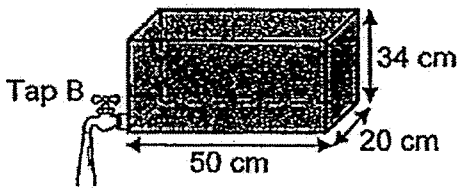
Ans: _____ [3]

11. Tank X was empty. Tank Y was filled with water to the brim. Then, Tap A was turned on to fill Tank X and Tap B was turned on to drain water from Tank Y. Both taps were turned on at the same time with water flowing at the same rate of 2.8 litres per minute. How long did it take for the height of water to be the same in both tanks?

Do not write in this space



Tank X



Tank Y

Ans: _____ [4]

12. Mrs Lee had used some dark and white chocolate chips for baking cookies. She used an equal amount of dark and white chocolate chips. She had $\frac{2}{7}$ of the dark chocolate chips and $\frac{3}{5}$ of the white chocolate chips left.

(a) What fraction of the chocolate chips was used?

(b) If there were 304 g of the chocolate chips left, what was the mass of chocolate chips at first?

Do not write in this space

Ans: (a) _____ [2]

Ans: (b) _____ [2]

13. There was a total of 748 oranges and apples at a fruit stall in the morning. By afternoon, the number of oranges sold was thrice the number of apples sold. The number of apples left was twice the number of oranges left. There were 22 more apples left than the apples sold.

(a) How many apples were sold?
(b) How many oranges were there in the morning?

Do not write in this space

Ans: (a) _____ [2]

Ans: (b) _____ [2]

14. Cheryl and Milton left for the park from their respective homes at the same time. Milton travelled 120 km at an average speed of 90 km/h and reached the park first. Cheryl travelled at an average speed of 80 km/h and reached the park 55 minutes later than Milton. If Cheryl wanted to reach the park the same time as Milton, what would be her new speed?

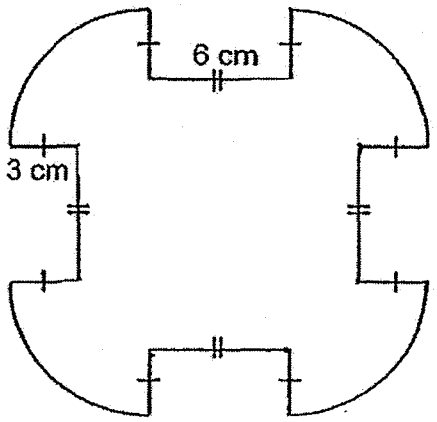
Do not write in this space

Ans: _____ [4]

15. The figure below is made up of four quarter circles and straight lines. All corner angles are at right angles. Each number represents the length of the straight line in centimetres. The radius of each quarter circle is 6 cm.

(a) What is the area of the figure? Leave your answer in terms of π.

(b) What is the perimeter of the figure? Leave your answer in terms of π.



Do not write in this space

Ans: (a) _____ [3]

Ans: (b) _____ [2]

16. There were some pens in boxes A, B and C. Box A had 25% more pens than Box B. Box C had 45 more pens than Box A. 40% of pens from each box were taken to pack into 73 packets. All the packets had an equal number of pens. A total of 288 pens from Boxes B and C were taken for the packing. How many pens were there in each packet?

Do not write in this space

Ans: _____ [4]

Do not write in this space

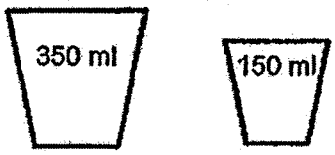
17. A bakery made some buns for charity. $\frac{3}{5}$ of them were chicken buns and the rest were tuna buns. $\frac{7}{8}$ of the chicken buns and 600 of the tuna buns were eaten. $\frac{7}{40}$ of all the buns were left.

(a) How many buns were made?
(b) How many tuna buns were left?

Ans: (a) _____ [3]

Ans: (b) _____ [2]

18. Mrs Gopal prepared some juice for a party. She poured half the amount of juice in big cups and the other half of the amount of juice in small cups as shown in the diagram below.



After filling the big cups and small cups to the brim with the juice, she counted that there were 48 more small cups than big cups. How much juice did Mrs Gopal prepare for the party? Give your answer in litres.

Do not write in this space

Ans: _____ [5]

End of Paper

ANSWER SHEET

EXAM PAPER 2017 (P6)

SCHOOL : ROSYTH

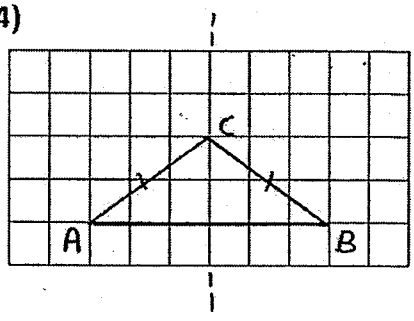
SUBJECT : MATHEMATICS

TERM : PRELIM

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

16)12 17)0.753 18)97/500 19)45 20)50cm

21)2014 22)54cm 23)20° 24)

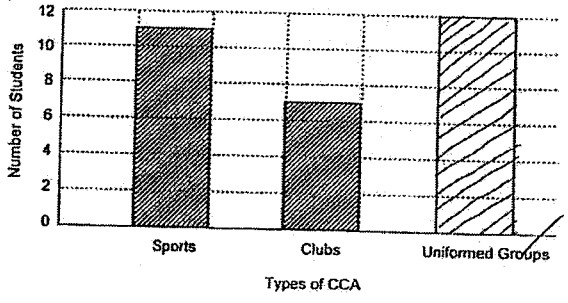


25)12cm2 26)15L 27)9m

28)32.5% 29)360° 30)18

PAPER 2

1)



2)8 : 11 = 24u : 33u

12 : 11 = 24u : 22u

33u – 22u = 11u →88

1u→8

24u →192

3)5 x 4 x 3 = 60

60 – 13 = 47

4)time each student could play

= 90 x 16 ÷ 30

=1440 ÷ 30

=48 minutes

5)80 + 72 + 90 + 8 = 250

80 x 4 = 320

320 – 250 = 70→7 tens ones

Math→90

Sci →78

90 – 78 = 12

6)26 x 45 = 1170

26 + 14 = 40

40 x 52 = 2080

2080 – 1170 = 910

910 ÷ 14 = 65

7)Add a new point F such that BF : FC = 3 : 2

△BFE→60cm2

△ FCE→60÷3 x 2 = 40cm2 = △ CED

Area of ABCD→(60+40) x 2 = 200cm2

8)$M + $A = $160

$u + $38 + $u = $160 – $20 + $5 = $145

$2u + $38 = $145

$2u→$107

$1u→$53.50

$53.50 + $38 = $91.50

$M→$91.50 + $20 = $111.50

9)Present

D : E

8u 3u

8u – 3u = 5u→30

1u→6

3u→18

8u→48

X years later,

D : E

5p 3p

5p – 3p = 2p→30

1p→15

3p→4 5p→75 X→45 – 18 = 27

10)(u-28) x 3 = 1u + 64 + 14

3u – 84 = 1u+ 78

2u→84 + 78 = 162

1u→81

81 + 64 = 145

11)Every min

2800 ÷ 50 ÷ 14 = 4

Tank X gains a height of 4cm

2800 ÷ 50 ÷ 20 = 2.8

Tank Y loses a height of 2.8cm

4 + 2.8 = 6.8

34 ÷ 6.8 = 5 min

12)a)5u = 2p

5p = 12.5u

12.5u + 7u = 19.5u

Fraction of cholate chips used→10u/19.5u =20u/39u = 20/39

b)9.5u→304g

1u→32g

19.5u→624g

13)a)6u + 2u + 1u + 11 + 2u + 22 = 11u + 33→748

11u→715

1u→65

2u→130

b)6u + 1u + 11 = 7u + 11→7 x 65 + 11 = 466

14)Time Milton took→120÷90 = 1h 20min

Time Cheryl took→1h 20min + 55min = 2h 15min

Distance Cheryl travelled→2¼h x 80 = 180km

Cheryl's new speed→180÷1⅓h = 135km/h

15)a)Area→12 x 12 + 6 x 6 x π - 3 x 3 x 4 = 108 + 36π = (36π + 108)cm2

b)Perimeter→12 x π + 48 = (12π + 48)cm

16)40u + (50u + 18) = 90u + 18→288

90u→270

1u→3

40u + 50u + (50u + 18) = 140u + 18→438

438÷73 = 6

17)a)16u – 600 + 3u = 19u – 600

19u – 600/40u = 7/40

19u – 600 = 7u

12u→600

1u→50

40u→2000

b)16u – 600 →16 x 50 – 600 = 200

18)Number of big cups : Number of small cups = 150 : 350 =15 : 35 = 3u : 7u

7u – 3u = 4u

1u→12

3u→36

7u→84

36 x 350ml + 84 x 150ml = 25200ml = 25.2L