2017 PRELIMINARY EXAMINATION
MATHEMATICS
PAPER 1 (BOOKLET A)
PRIMARY SIX

Name: _____ ( ) Class: Primary 6 ___

Date: 23 August 2017 Duration of Booklets A & B: 50 minutes

INSTRUCTIONS TO CANDIDATES

1. This question paper consists of **10** printed pages, including the cover page.
2. Do not turn this page until you are told to do so.
3. Follow all instructions carefully.
4. Shade your answers on the Optical Answer Sheet (OAS) provided.
5. 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 (OAS). (20 marks)

1. Mrs Lim bought a car for $119 815.

   What is this amount when rounded off to the nearest $1000?

   1) $119 000
   2) $119 800
   3) $119 900
   4) $120 000

2. What is the missing number in the box?

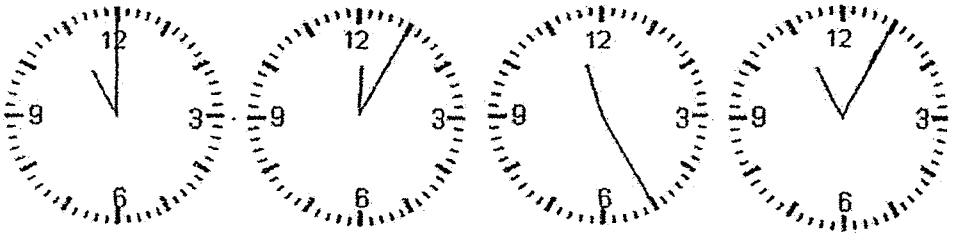
$$\frac{3}{11} \div \frac{2}{11} \div \frac{2}{11} = \square \times \frac{1}{11} \div \frac{1}{11}$$

   1) 5
   2) 6
   3) 7
   4) 8

3. Find the value of $\frac{3w}{2} - w + 4$ when $w = 18$.

1) 5
2) 9
3) 13
4) 45

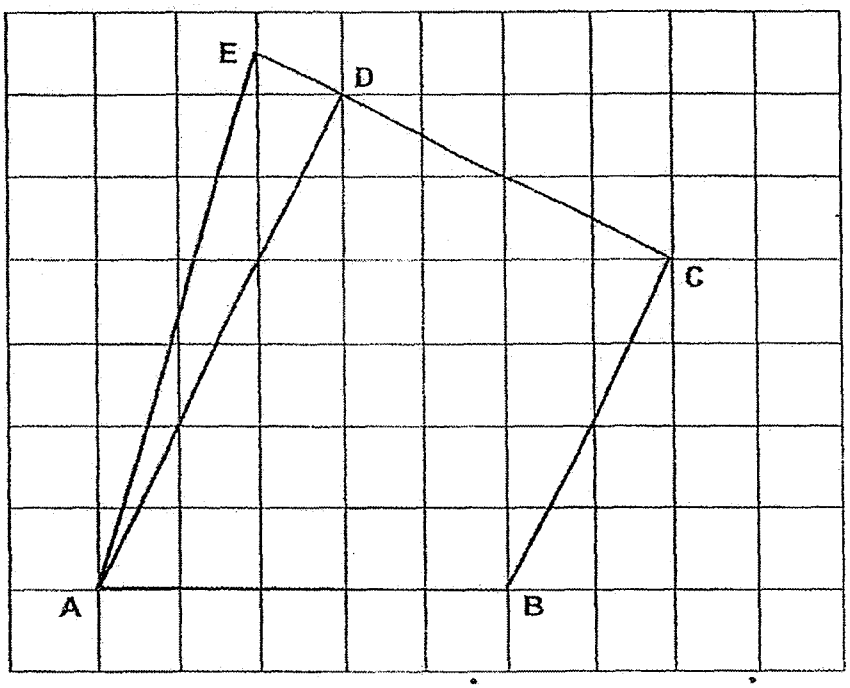
4. In the 4 clocks below, labelled A, B, C and D, which two clocks have a time difference of 20 minutes?



A B C D

1) B and D
2) B and C
3) A and C
4) C and D

5. Which two lines in the square grid below are perpendicular to each other?



1) AE and EC
2) AE and BC
3) AD and BC
4) AD and EC

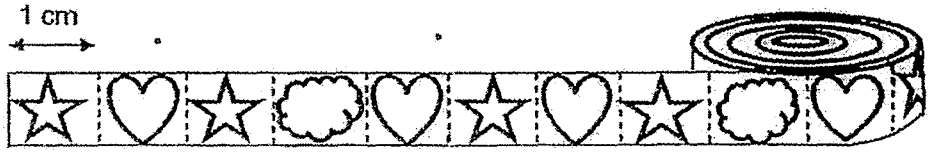
6. A cube has 4 of its faces painted in blue. The total area painted in blue is 64 cm^2. What is the volume of the cube?

1) 4 cm^3
2) 64 cm^3
3) 256 cm^3
4) 512 cm^3

7. Mrs Yeo has 110 gummies to be packed in gift bags. Each gift bag can hold a maximum of 6 gummies. What is the smallest number of gift bags she needs?

1) 16
2) 17
3) 18
4) 19

8. A roll of stickers is made up of stickers of star, heart and cloud shapes. The shapes are repeated in the pattern as shown below. Each shape sticker takes up about 1 cm of the roll of stickers.

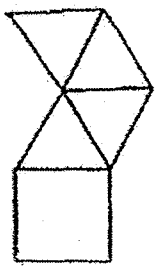


Geoff gave away 1 m of the roll of stickers. How many heart shaped stickers would he have given away?

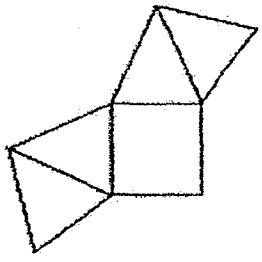
1) 20
2) 25
3) 40
4) 50

9. Which of the following is not a net of a pyramid?

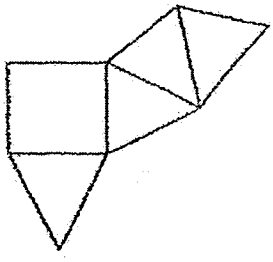
1)



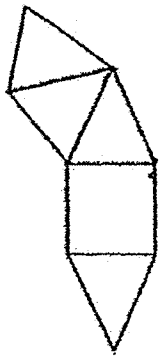
2)



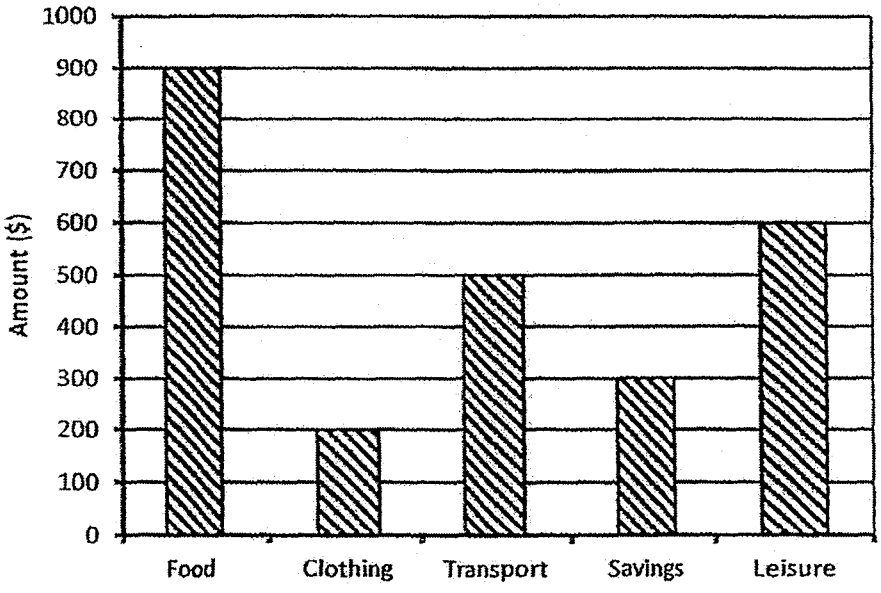
3)



4)



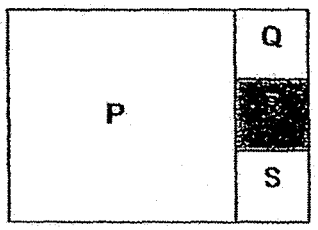
10. The bar graph below shows the expenditure of Mr Lee.



On which item does he spend $\frac{2}{3}$ as much as the amount he spends on food?

1) Clothing
2) Transport
3) Savings
4) Leisure

11. The figure is made up of 4 squares, P, Q, R and S. What fraction of the figure is square R?



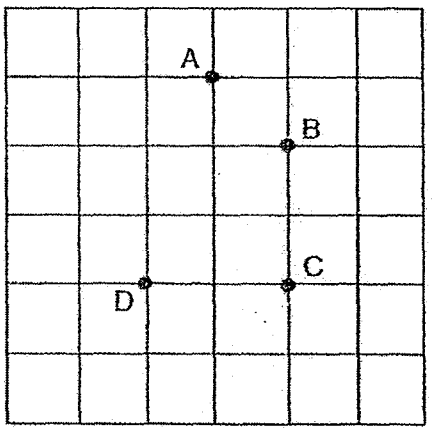
1) $\frac{1}{3}$

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

3) $\frac{1}{9}$

4) $\frac{1}{12}$

12.



Refer to the square grid above, which of the following statements is true?

1) Point B is south of Point A.
2) Point C is north of Point B.
3) Point A is north-east of Point D.
4) Point D is south-west of Point B.

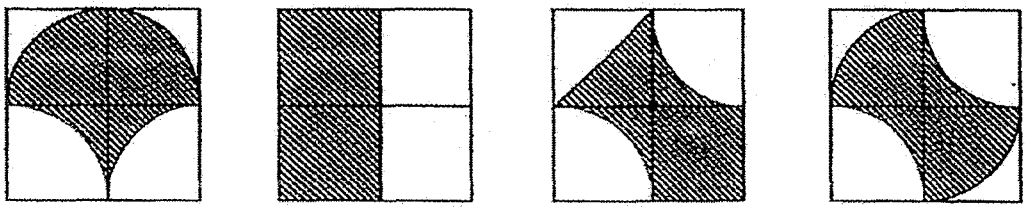
13. The average height of 3 children, Aaron, Benjamin and Coen, was 150 cm. Aaron was 9 cm taller than Benjamin and Benjamin was 12 cm shorter than Coen. Find the height of Benjamin.

1) 143 cm
2) 152 cm
3) 155 cm
4) 164 cm

14. A sum of money was shared among Jonathan, Benny and Samuel in the ratio 4 : 8 : 5. If Jonathan and Benny received $252 more than Samuel, how much money did Samuel receive?

1) $105
2) $180
3) $240
4) $315

15. In the 4 diagrams below, labelled A, B, C and D, which 3 of them have the same shaded area?



A B C D

1) A, B, C
2) A, B, D
3) B, C, D
4) A, C, D

PRELIMINARY EXAMINATION 2017
MATHEMATICS
PAPER 1 (BOOKLET B)
PRIMARY SIX

Name: _____ ( ) Class: Primary 6 _____

Date: 23 August 2017 Duration of Paper Booklets A & B: 50 minutes

_____
Parent's/Guardian's signature

INSTRUCTIONS TO CANDIDATES

1. This question paper consists of 8 printed pages, including the cover page.
2. Do not turn this page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. You are not allowed to use a calculator.

Section	Maximum marks	Marks Obtained
Paper 1 Booklet A. Multiple-Choice Questions	20	
Paper 1 Booklet B. Short Answers: Part 1	10	
Paper 1 Booklet B. Short Answers: Part 2	10	
Total Marks	40	

Questions 16 to 25 carry 1 mark each. Write your answers in the spaces provided. Give your answers in the units stated and to its simplest form whenever necessary.

(10 marks)

16. Find the value of $80 - 56 \div 8 \times 6$.

Ans : _____

17. Express $6\frac{3}{8}$ as a decimal.

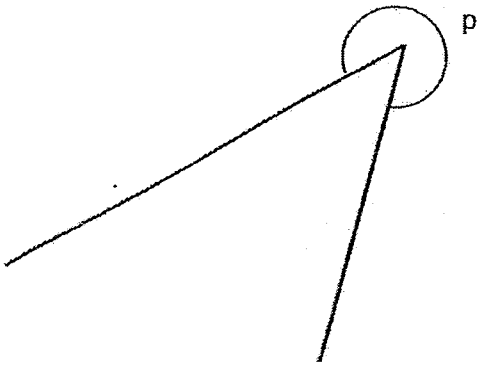
Ans : _____

18. 3 girls share 2 identical butter cakes equally.
5 boys share 4 identical butter cakes equally.
What is the difference between each boy's and each girl's share?

Ans : _____

Sub-Total : [ ]

19. Measure and write down the size of ∠p in the figure.



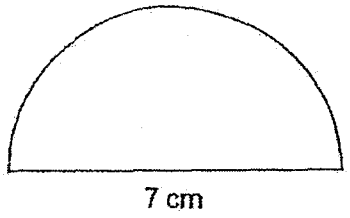
Ans : _____°

20. At a class gathering, $\frac{1}{5}$ of the girls is equal to $\frac{2}{7}$ of the boys. Express the total number of boys as a fraction of the total number of girls.

Ans :

Sub-Total : ☐

21. What is the perimeter of a semicircle of diameter 7 cm?
(Take $\pi = \frac{22}{7}$)

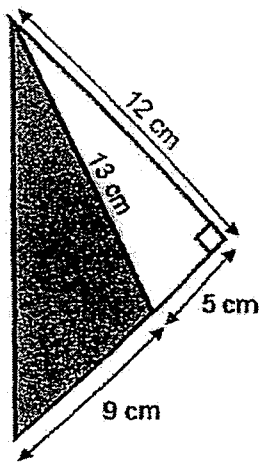


Ans : _____ cm

22. 7 machines can produce k cupcakes. How many cupcakes will 3 such machines produce?

Ans : _____

23. Find the area of the shaded part.



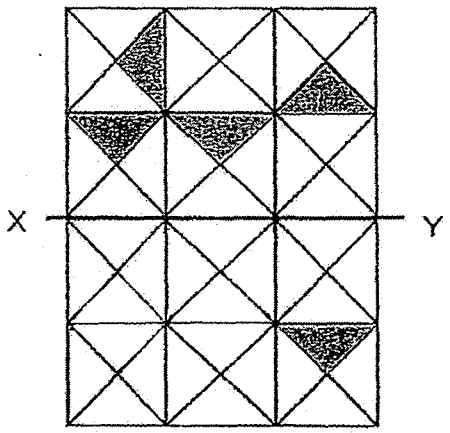
Ans : _____ cm^2

Sub-Total : [ ]

24. Find the area of a circle of diameter 20 cm. (Take $\pi = 3.14$)

Ans : _____ cm^2

25. The figure below is made up of identical triangles. Five of them are shaded. Shade three more triangles so that XY is the line of symmetry for the figure.



Sub-Total :

Questions **26** 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. (10 marks)

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26. Mr Wong has some bookmarks. If he gives each of his pupils 4 bookmarks, he will have 8 bookmarks left. If he gives each of his pupils 6 bookmarks instead, he will be short of 10 bookmarks. How many bookmarks did Mr Wong have?

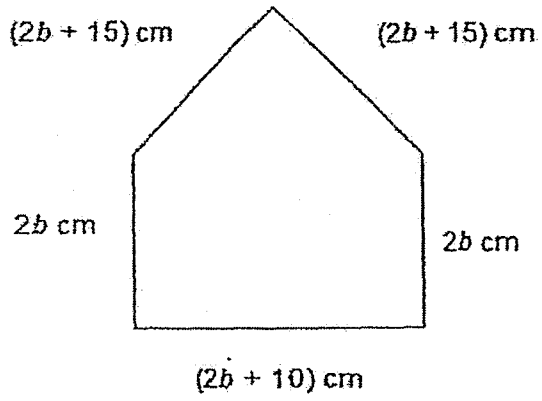
Ans : _____

27. A school has 1 500 pupils. 40% of them are girls. 60% of the boys go to school by school bus. How many boys go to school by school bus?

Ans : _____

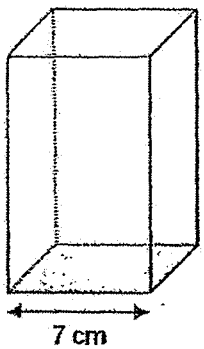
Sub-Total : ☐

28. John had 1.5 m of wire. He used some of it to form a shape as shown below. If $b = 5$, how much of the wire was **not** used to make the shape?



Ans : _____ cm

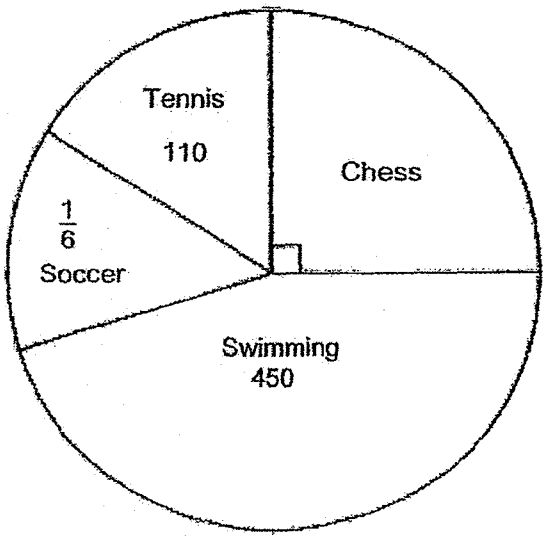
29. A rectangular vase has a square base. The height of the vase is twice the length of the square. Find the volume of the vase.



Ans : _____ cm^3

Sub-Total :

30. The pie chart below shows the results of a survey carried out among Primary 5 and Primary 6 pupils in a school to find out the favourite sport among the pupils.



How many pupils chose Chess as their favourite sport?

Ans : _____

Sub-Total :

2017 PRELIMINARY EXAMINATION
MATHEMATICS
PAPER 2
PRIMARY SIX

Name: _____ ( ) Class: Primary 6 ____

Date: 23 August 2017 Duration of Paper 2: 1 hour 40 minutes

_____
Parent's/Guardian's signature

INSTRUCTIONS TO CANDIDATES

1. This question paper consists of 16 printed pages, including the cover page.
2. Do not turn this page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. You are allowed to use a calculator.

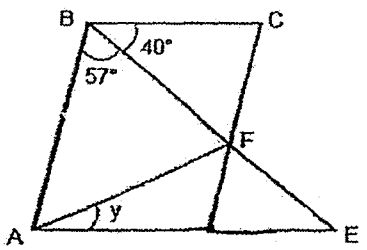
Section	Maximum Marks	Marks Obtained
Paper 2 Section A. Short Answers	10	
Paper 2 Section B. Problem Sums	50	
Total Marks	60	

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 restaurant is having a promotion on buffet. The price of the buffet is \$38 per customer. For every 3 paying customers, the 4th customer will dine for free. What is the greatest number of customers who dined at the buffet if \$608 was spent?

Ans : _____

2. In the diagram, ABCD is a parallelogram. ADE and BFE are straight lines. AF = BF, ∠ABF = 57° and ∠CBF = 40°. Find ∠y.



Ans : _____ °

Sub-Total :

3. A rectangular container with a base of 30 cm by 20 cm and height 10 cm was partially filled with water. After another 1500 cm^3 of water was poured in, the container was completely filled. What was the height of the water level at first?

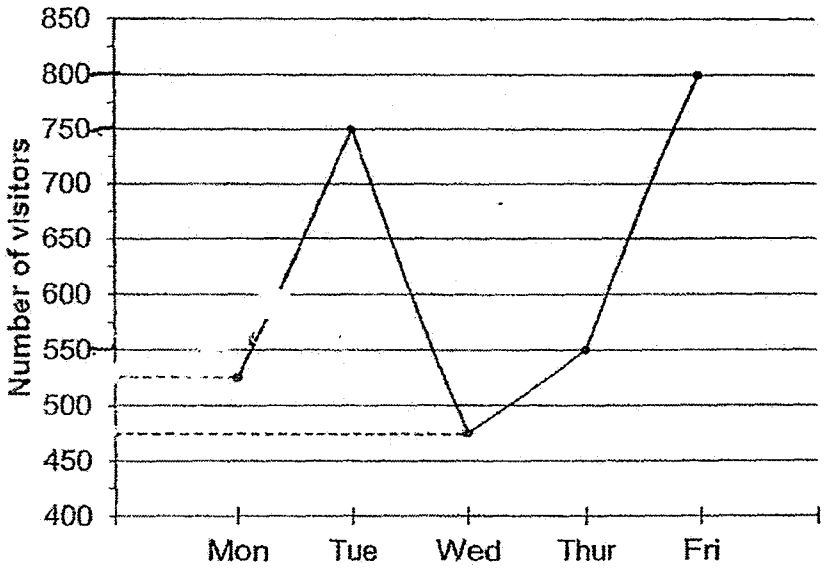
Ans : _____ cm

4. Jim was at the Airport in country A. At 2.15 p.m., he flew off to country B and arrived there 2 hours later and saw that the clock in country B showed 3.15 p.m. If the time in country A is 10 p.m., what time is it in country B?

Ans : _____ p.m.

Sub-Total :

5. The line graph shows the number of visitors to the museum over five days.



What is the percentage of the total number of visitors who visited the museum on Monday? Round off your answer to the nearest 1 decimal place.

Ans : _____ %

Sub-Total :

For questions **6** to **18**, 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. (50 marks)

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6. Mrs Amin spent an equal amount of money on 4 apple pies and 7 curry puffs at a bakery. Each apple pie costs 90 cents more than each curry puff. How much did Mrs Amin spend altogether?

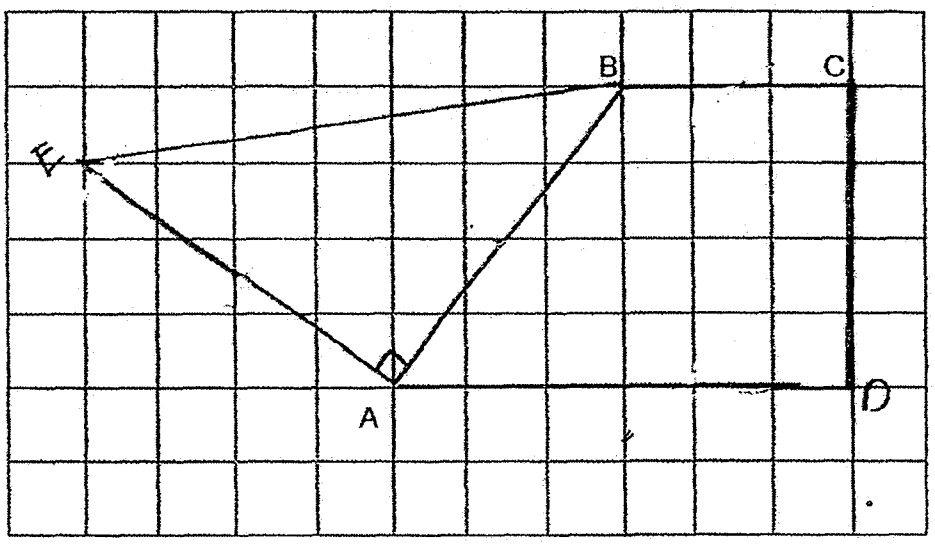
Ans : _____ [3]

Sub-Total : ☐

7. In the square grid below, two sides of a trapezium ABCD have been drawn.

a) Complete the drawing of the trapezium within the grid such that BC is parallel to AD and AD is twice the length of BC. [1]

b) AB also forms one side of a triangle ABE in which AB = AE and ∠BAE is a right angle. [2]

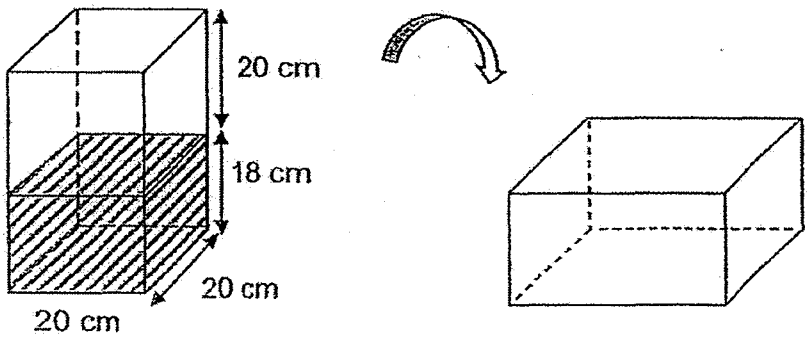


8. Caleb bought a camera with 40% of his money and a radio which costs $83 less than the camera. If he spent $265 altogether, how much money did he have at first?

Ans : _____ [3]

Sub-Total :

9. A rectangular container measuring 20 cm by 20 cm by 38 cm is completely sealed so that the water cannot be removed. The height of the water level is 18 cm. When it is turned to the side as shown below, what would the height of the water level be? Give your answer correct to 2 decimal places.



Ans : _____ [3]

Sub-Total :

10. The table below shows the number books read by each pupil in a class of 40 pupils. One of the numbers in the table is covered by an ink blot.

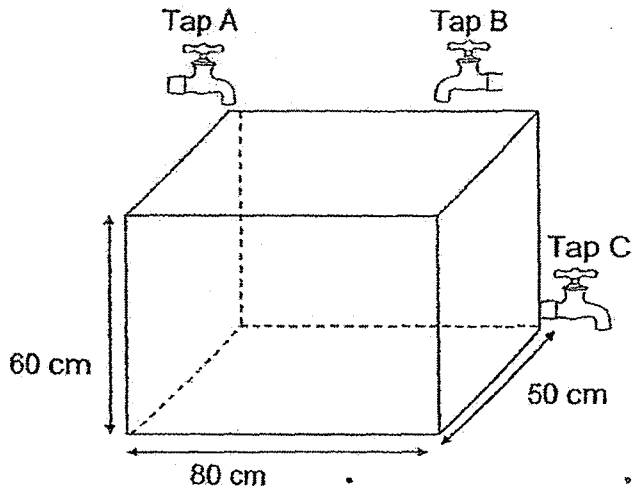
Number of books read by each pupil	0	14	
Number of pupils	4	20	16

The average number of books read by the pupils in the class is 9.
What is the number covered by the ink blot?

Ans : _____ [3]

Sub-Total :

11. The figure below shows an empty rectangular tank measuring 80 cm by 50 cm by 60 cm.
Water flows from Tap A into the tank at a rate of 8 litres per minute and from Tap B at a rate of 6 litres per minute. Tap C drains water from the tank at a rate of 4 litres per minute. At 1 p.m., Tap A was turned on. At 1.15 p.m., Taps B and C were also turned on. At what time will the tank be completely filled with water?



Ans : _____ [4]

Sub-Total :

12. Jasmine spent $\frac{4}{9}$ of her money on 6 mugs. She bought another 3 identical mugs and 10 files with the rest of her money.

a) What fraction of her money did she spend on the 10 files?

b) How many files could she buy if she had spent all her money on files only?

Ans : a)_____ [2]

b)_____ [2]

Sub Total :

13. Mr Gopal spent $\frac{1}{5}$ of his money on 5 mechanical pencils and 12 highlighters. The cost of each mechanical pencil is 3 times the cost of each highlighter. He bought some more of the same mechanical pencils with $\frac{1}{3}$ of his remaining money.

a) What fraction of his money was spent on the additional mechanical pencils?

b) How many mechanical pencils did he buy altogether?

Ans : a) _____ [1]

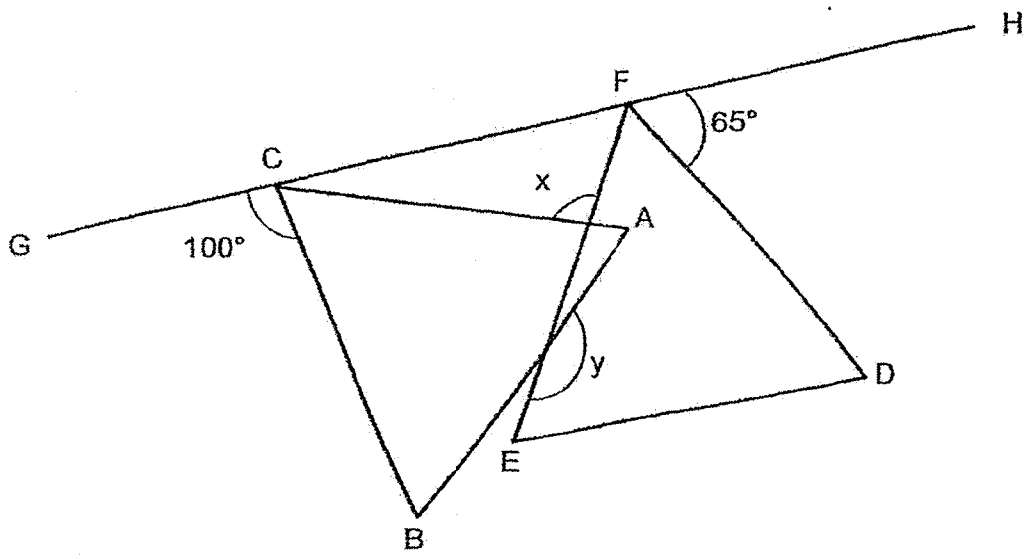
b) _____ [3]

Sub-Total :

14. In the diagram below, ABC and DEF are equilateral triangles. GCFH is a straight line. $\angle DFH = 65°$ and $\angle GCB = 100°$.

a) Find $\angle x$.

b) Find $\angle y$.



Ans : a) _____ [2]

b) _____ [2]

Sub-Total :

15. At 9 a.m., Katie left Sunville and drove towards the city at an average speed of 60 km/h. Two hours later, Perry also left Sunville and drove along the same route as Katie. After travelling 270 km, Perry caught up with Katie.

(a) What was Perry's average speed?

(b) How far apart would they be at 3 p.m.?

Ans : a)_____ [2]

b) _____ [2]

Sub-Total :

16. At a florist, roses are sold at 4 stalks for $9 while carnations are sold at 7 stalks for $6. Mrs Ting bought an equal number of stalks of roses and carnations. She spent $117 more on the roses.

a) How many stalks of flowers did she buy altogether?

b) Her sister visited the same florist and spent an equal amount of money on the stalks of roses and carnations. What fraction of the stalks of flowers she bought were roses?

Ans : a)_____ [3]

b)_____ [2]

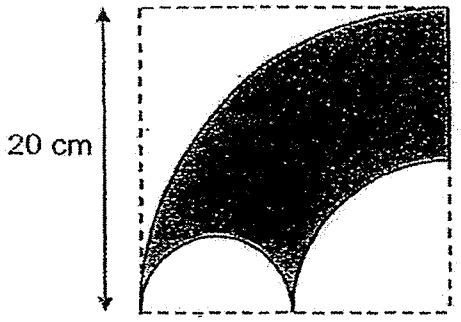
Sub-Total :

17. A figure is drawn on a square piece of paper of side 20 cm. Its outline consists of a large quadrant, 1 smaller quadrant, a semi-circle and a straight line. The radius of the smaller quadrant is twice the radius of the semi-circle.

For each of the following, use the calculator value of π to find

a) the perimeter of the figure correct to 2 decimal places,

b) the area of the figure correct to 2 decimal places.



Ans : a) _____ [2]

b) _____ [3]

Sub-Total :

18. The total number of sweets in Container A, Container B, Container C and Container D was 450. After I doubled the number of sweets in Container A, took out half of the sweets in Container B, added 50 sweets to Container C and took out 40 sweets from Container D, the number of sweets in Container A to Container B to Container C to Container D is then in the ratio 1 : 2 : 3 : 4.

a) What is the ratio of the number of sweets in Container A to the number of sweets in Container B at first?

b) What is the total number of sweets in the four containers in the end?

Ans : a) _____ [2]

b) _____ [3]

End of Paper 2

Sub-Total :

ANSWER KEY

YEAR : 2017
LEVEL : PRIMARY 6
SCHOOL : : ANGLO-CHINESE (JUNIOR/PRIMARY)
SUBJECT : : MATHEMATICS
TERM : PRELIMINARY EXAMINATION

Paper 1

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

Q16 38

Q17 *6.375*

Q18 *2/15*

Q19 *315°*

Q20 $\frac{7}{12}$

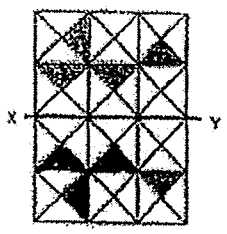
Q21 18 *cm*

Q22 $\frac{3k}{7}$

Q23 54 cm^2

Q24 314 cm^2

Q25



Q26 44 bookmarks

Q27 540 boys

Q28 60 cm

Q29 686 cm^3

Q30 240 pupils

Paper 2

Q1 21 customers

Q2 26°

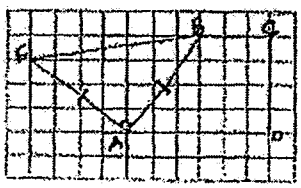
Q3 $30 \times 20 \times 10 = 6000$
$6000 - 1500 = 4500$
$4500 \div 30 \div 20 \Rightarrow 7.5cm$

Q4 *9pm*

Q5 $525 + 750 + 475 + 550 + 800 = 3100$
$3100 \div 100 = 31$
$525 \div 31 = 16.9354 \approx \underline{16.9°}$

Q6 $4a = 7€$
$4 \times 0.9 = 3.6$
$3.6 \div 3 = 1.2$
$1.2 \times 7 \times 2 \Rightarrow \$16.80$

Q7 (a & b)



Q8 40% on camera }
40% - 83 on radio } 265
$265 + 83 = 348$
$348 \div 80 = 4.35$
$4.35 \times 100 \Rightarrow \underline{\$435}$

Q9 $20 \times 20 \times 18 = 7200$
$7200 \div 38 \div 20 = 9.4736 \approx \underline{9.47 \text{ cm}}$

Q10 $9 \times 40 = 360$
$20 \times 14 = 280$
$360 - 280 = 80$
$80 \div 16 \Rightarrow \underline{5}$

Q11 $8000 \times 15 = 120000$
$60 \times 80 \times 50 = 240000$
$240000 - 120000 = 120000$
$8 + 6 - 4 = 10$
$120000 \div 10000 = 12$
$1{:}15 \text{ pm} + 12 \text{ min} \Rightarrow 1{:}27 \text{ pm}$

Q12 (a) $\frac{4}{9} = 6$ *mugs*

$\frac{2}{9} = 3$ mugs

$\frac{6}{9} = 9$ mugs

$\frac{9}{9} - \frac{6}{9} \Rightarrow \frac{3}{9}$

(b) $\frac{3}{9} \times 3 = \frac{9}{9}$

$10 \times 3 \Rightarrow \underline{30 \text{ files}}$

Q13 (a) $\frac{4}{15}$

(b) 17 pencils

Q14 (a) $\angle CFE = 180° - 60° - 65° \rightarrow 55°$
$\angle FCA = 180° - 100° - 60° \rightarrow 20°$
$\angle x = 180° - 20° - 55° \Rightarrow \underline{105°}$

(b) $\angle CJB = 180° - 105° \rightarrow 75°$
$\angle EJA = 180° - 75° \rightarrow 105°$
$\angle y = 180° - (180° - 105° - 60° \Rightarrow \underline{165°}$

Q15 (a) $270 - 120 = 150$
$150 \div 60 = 2.5$ hr
$270 \div 2.5 \Rightarrow$ <u>108 km/h</u>

(b) $108 \times 1\frac{1}{2} = 162$

$60 \times 1\frac{1}{2} = 90$

$162 - 90 \Rightarrow$ <u>70 km</u>

Q16 (a) 168 *stalks*

(b) $\frac{8}{29}$

Q17 (a) $40 \times \frac{1}{4} \times \pi = 10$

$10 \times \frac{1}{2} \times \pi = 5$

$20 \times \frac{1}{4} \times \pi = 5$

$10\pi + 5\pi + 5\pi + 10 = 72.8318 \approx$ <u>72.83cm</u>

(b) *196.35cm2*

Q18 (a) 1 : 8

(b) $450 - 40 = 410$
$410 + 50 = 460$
$460 \div 23 = 20$
$20 \times 20 \Rightarrow$ <u>400 sweets</u>