



Anglo-Chinese School (Junior)/Anglo-Chinese School (Primary)

P6 MATHEMATICS 2007

COMBINED PRELIMINARY EXAMINATION

BOOKLET A

Name: \_\_\_\_\_ ( ) Class: Primary 6 \_\_\_

Date: 22 August 2007

Duration of paper: 2h 15 min

**THIS BOOKLET CONTAINS 5 PAGES.**

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

**FOLLOW ALL INSTRUCTIONS CAREFULLY.**

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.  
Mark your choice (1, 2, 3 or 4). Shade the oval (1, 2, 3 or 4) on the  
Optical Answer Sheet (20 marks)

1 Simplify  $12w - 5 - 7w + 8$ .

- (1)  $5w + 3$
- (2)  $5w - 3$
- (3)  $5w + 13$
- (4)  $5w - 13$

2 Express  $\frac{1}{40}$  as a decimal.

- (1) 0.025
- (2) 0.04
- (3) 0.25
- (4) 0.4

3 Express  $\frac{5}{6}$  hour in minutes.

- (1) 10
- (2) 50
- (3) 300
- (4) 360

4 What is the approximate height of a teacher's table?

- (1) 7 cm
- (2) 7 m
- (3) 70 cm
- (4) 70 m

5 A block of metal, 16 cm by 8 cm by 4 cm, was melted and recast into the shape of a cube. What is the length of each side of the cube?

- (1) 6 cm
- (2) 8 cm
- (3) 12 cm
- (4) 16 cm

6 Jolene and Mary had an equal number of beads. If Mary gave  $\frac{2}{7}$  of her beads to Jolene, what was the ratio of Mary's beads to Jolene's beads?

- (1) 5 : 7
- (2) 7 : 5
- (3) 5 : 9
- (4) 9 : 5

7 The chairs in an examination hall were arranged in rows. Each row had the same number of chairs. Cheryl sat on one of the chairs. There were 7 chairs to her right and 4 chairs to her left. There were 7 chairs in front of her and 3 chairs behind her. How many chairs were there in the examination hall?

- (1) 110
- (2) 120
- (3) 121
- (4) 132

8 John bought 50 marbles. He bought 10 green marbles and 18 blue marbles. The rest were red marbles. What percentage of the marbles were red?

- (1) 22%
- (2) 44%
- (3) 54%
- (4) 64%

9 Which of the following is the net of a cube?



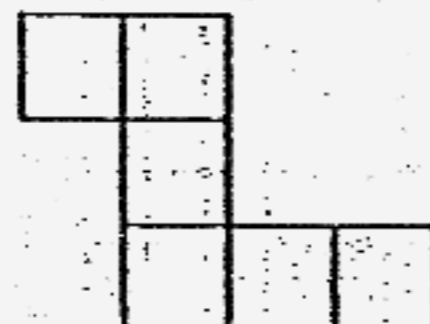
A



B



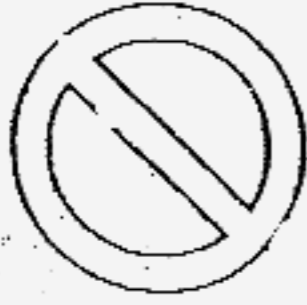
C



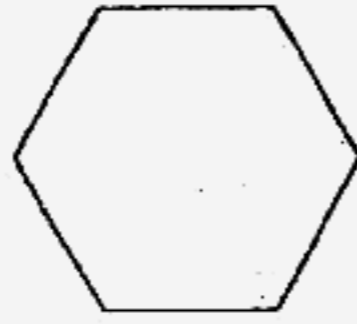
D

- (1) A
- (2) B
- (3) C
- (4) D

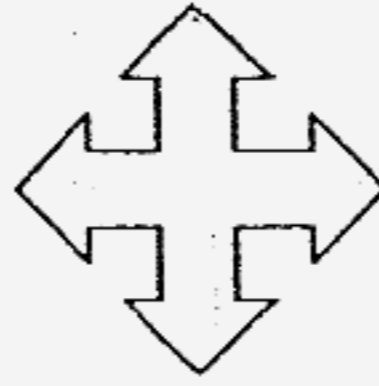
10 Which of the following shapes has exactly 2 lines of symmetry?



A



B



C



D

- (1) A
- (2) B
- (3) C
- (4) D

11 The ratio of two numbers is 7 : 4. The sum of the two numbers is 24 more than their difference. What is the sum of the two numbers?

- (1) 9
- (2) 33
- (3) 56
- (4) 88

12 What is the maximum number of circles of radius 2 cm that can be cut out from a rectangle 20 cm by 18 cm?

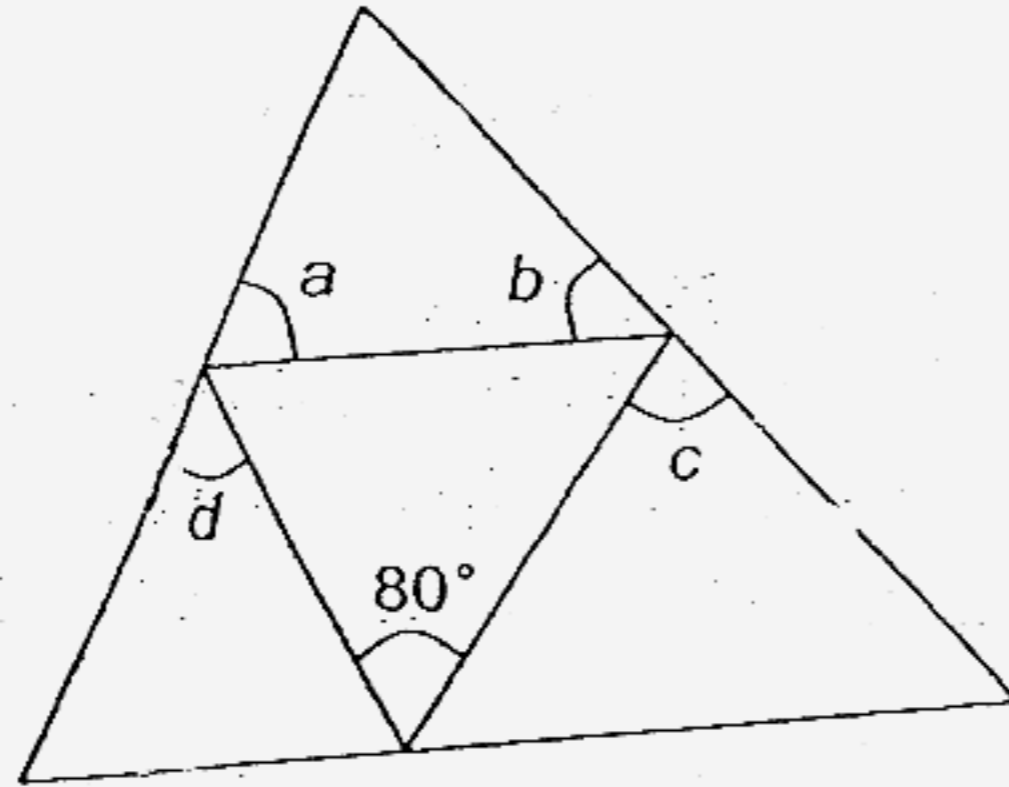
- (1) 16
- (2) 18
- (3) 20
- (4) 90

13 A rectangular tank was filled with water flowing from a tap. At 10.00 a.m., the tank was empty. At 1.00 p.m., the tank was  $\frac{1}{3}$  filled with water.

At what time would the tank be  $\frac{8}{9}$  filled with water flowing from the tap?

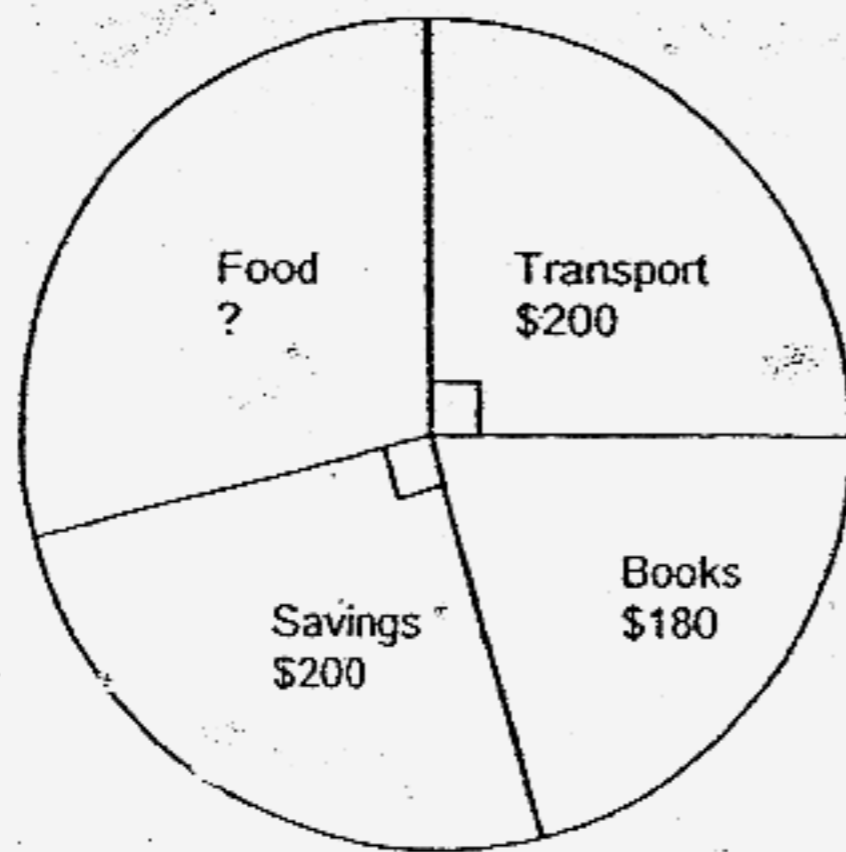
- (1) 4.00 p.m.
- (2) 5.00 p.m.
- (3) 6.00 p.m.
- (4) 7.00 p.m.

- 14 In the figure below, which is not drawn to scale, what is the value of  $a + b + c + d$ ?



- (1)  $100^\circ$
- (2)  $120^\circ$
- (3)  $260^\circ$
- (4)  $320^\circ$

- 15 The pie chart below shows how Tommy spent his money. What percentage of his money did he spend on food?



- (1) 20 %
- (2) 25 %
- (3) 27.5 %
- (4) 55.5 %



Anglo-Chinese School (Junior)/ Anglo-Chinese School (Primary)

P6 MATHEMATICS 2007

COMBINED PRELIMINARY EXAMINATION

BOOKLET B

Name: \_\_\_\_\_ ( ) Class: Primary 6 \_\_\_\_\_

Date: 22 August 2007

Duration of paper: 2h 15min

\_\_\_\_\_  
Parent's/Guardian's signature

SECTION A. Multiple Choice Questions	20	
SECTION B. Shorts answers: Part I	10	
SECTION B. Shorts answers: Part II	20	
SECTION B. Problem Sum	50	
Total	100	

THIS BOOKLET CONTAINS 19 PAGES.

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FOLLOW ALL INSTRUCTIONS CAREFULLY.

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)

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- 16 Use all the digits 3, 5, 0, 8 to form the smallest four-digit odd number that is divisible by 5.

Ans: \_\_\_\_\_

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- 17 For every \$9 saved by Jeremy, his father would give him another \$3 to save. How much did he save on his own if he had \$144 in his savings?

Ans: \$ \_\_\_\_\_

---

- 18 Ahmad has two 1-dollar coins, three 50-cent coins, eight 20-cent coins and three 5-cent coins in his wallet. How much money does he have in all?

Ans: \$ \_\_\_\_\_

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Sub-total:

19 Observe the following pattern and find the value of the sum of  $m$  and  $n$ .

1, 2, 6, 7, 12, 13, 19,  $m$ , 27, 28,  $n$ , 37, .....

Ans: \_\_\_\_\_

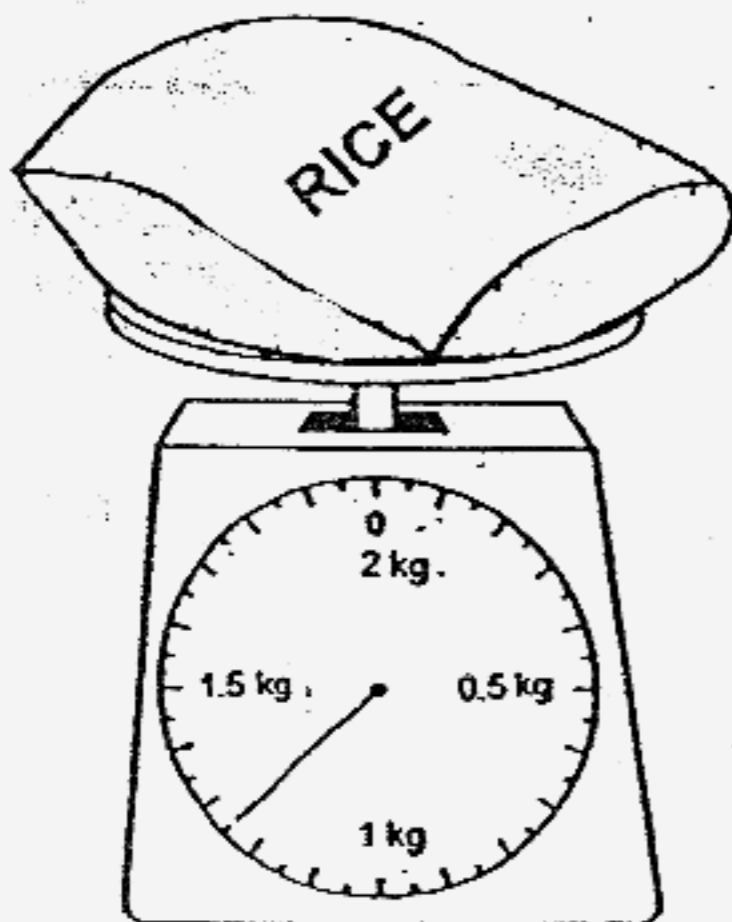
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20 Ben started jogging at 0830 and finished at 1010. How long did he take to complete his jog?

Ans: \_\_\_\_\_ h \_\_\_\_\_ min

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21 Look at the figure below. What is the mass of the packet of rice in kg and g?



Ans: \_\_\_\_\_ kg \_\_\_\_\_ g

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- 22 Howard has a string measuring 310 cm. Roy's string is  $\frac{1}{4}$  m longer than Howard's string. Find the length of Roy's string.

Ans: \_\_\_\_\_ m

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- 23 The breadth of a room is  $\frac{1}{4}$  its length. What fraction of the room's perimeter is its length? (Give the answer in its simplest form.)

Ans: \_\_\_\_\_

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- 24 Find the average of the sum of all even numbers between 11 and 19.

Ans: \_\_\_\_\_

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- 25 There are green, blue and purple balls in a basket. There are 237 more green balls than blue balls. There are 734 more blue balls than purple balls. How many more green balls than purple balls are there?

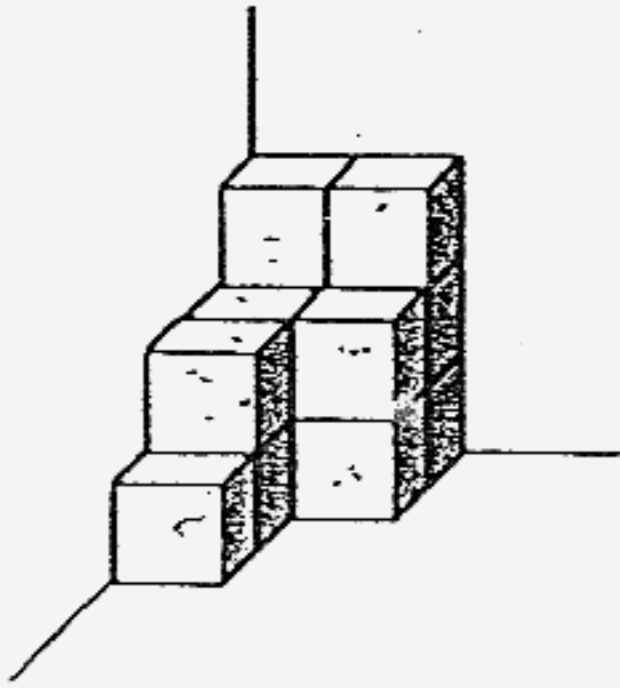
Ans: \_\_\_\_\_

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Questions 26 to 35 carry 2 marks each. Show your working clearly in the space below each question and write your answers in the spaces provided. For each question which require units, give your answers in the units stated.

(20 marks)

- 26 The solid is made up of 2-cm cubes. All the cubes are stacked in a corner of a room. What is the volume of the solid?

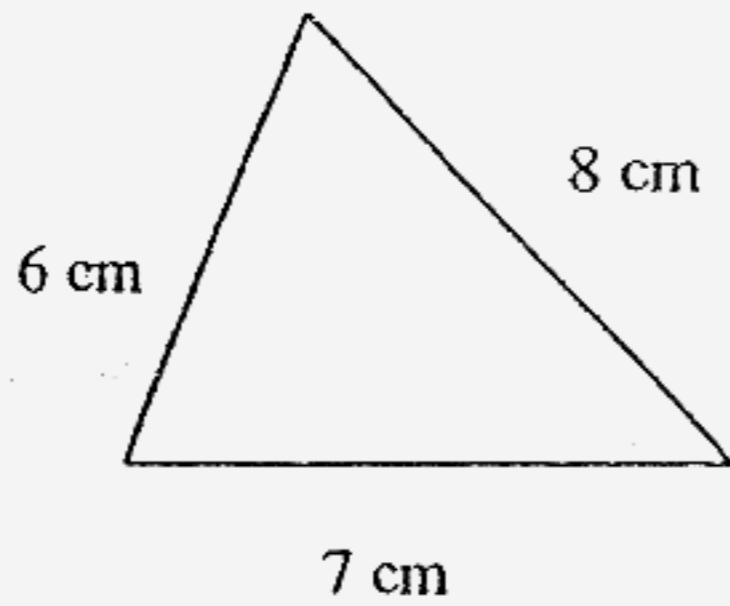


Ans: \_\_\_\_\_ cm<sup>3</sup>

- 27 Sheela has \$30 in her piggy bank. They were a mixture of 20-cent and 50-cent coins. There were 4 more 50-cent coins than 20-cent coins. What is the total number of coins Sheela has in her piggy bank?

Ans: \_\_\_\_\_

- 28 The perimeter of a rectangle is twice that of a triangle below. How many possible values of its length are there if each length is a whole number?



Ans: \_\_\_\_\_

- 29 A pen costs \$7 more than a wallet and a story book costs \$5 less than the wallet. If the pen and the story book cost \$21 altogether, find the cost of the wallet.

Ans: \$ \_\_\_\_\_

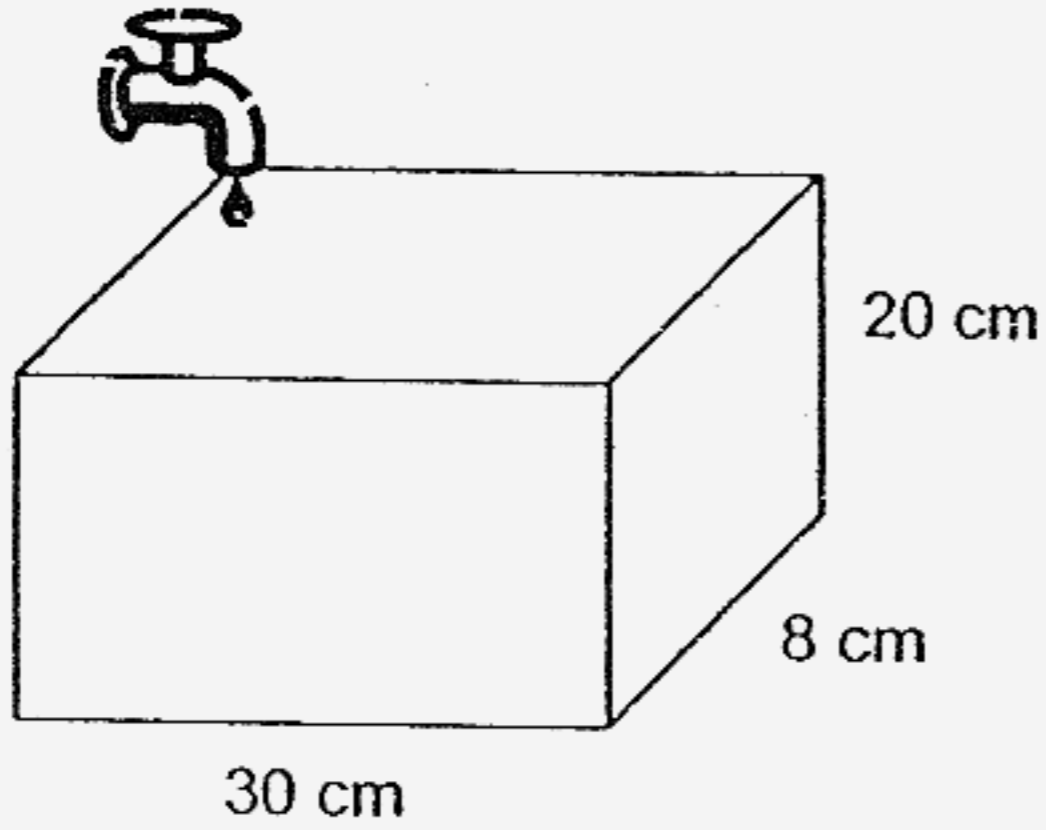
- 30 Mary had some beads. She gave  $\frac{1}{6}$  of them to her best friend and  $\frac{1}{2}$  of the remaining beads to her sister. Then she found that she had 75 beads left for herself. How many beads did Mary have at first?

Ans: \_\_\_\_\_

- 31 Lisa made some kiwi tarts, apple tarts and peach tarts in the ratio 2 : 3 : 5. After making another 12 tarts each, the ratio becomes 7 : 9 : 13. Find the number of apple tarts she has now.

Ans: \_\_\_\_\_

- 32 Water from a tap flows into a rectangular tank at a rate of  $450 \text{ cm}^3$  per minute. How long does it take to fill  $\frac{3}{4}$  of the tank?



Ans: \_\_\_\_\_ min

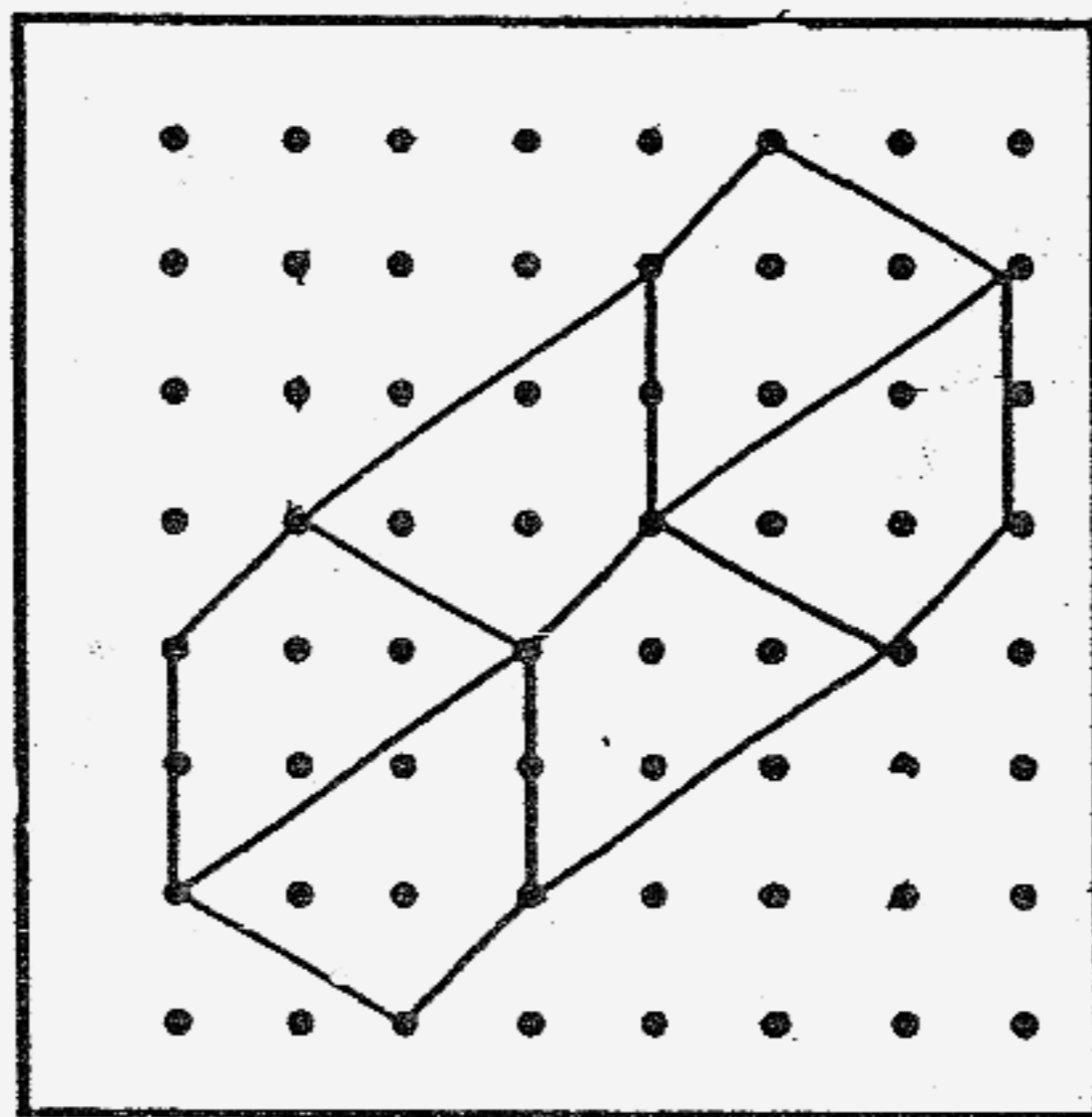
- 33 Mrs Tan and her two children paid \$70 for the entry tickets to an amusement theme park. If a child ticket is  $\frac{3}{4}$  of the price of an adult ticket, what is the price of an adult ticket?

Ans: \$ \_\_\_\_\_

- 34 It takes 40 workers 8 days to paint a building. How many workers are required to paint a building in 20 days?

Ans: \_\_\_\_\_

- 35 Complete the tessellation below by adding two more basic shapes.



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For questions 36 to 48, 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)

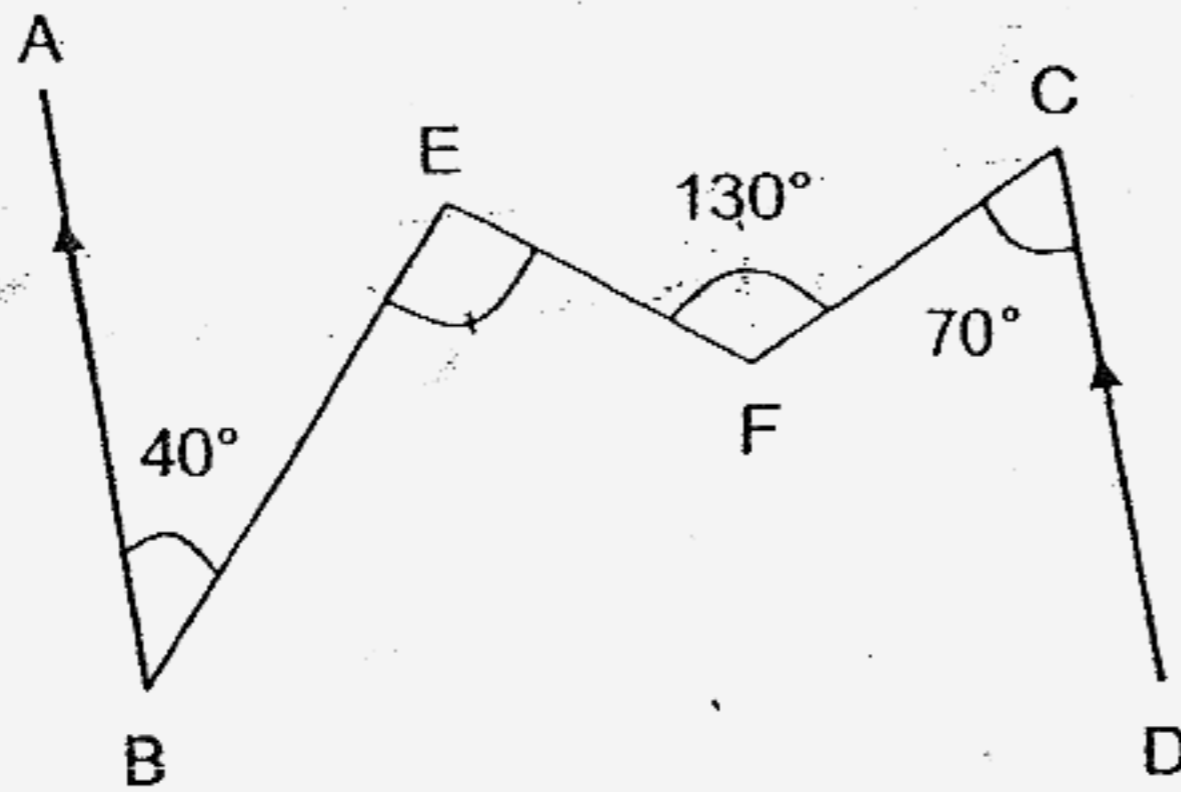
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- 36 Melinda had an average score of 56 marks in the last three topical tests. How many marks must she score in the fourth test so that she can get an average of 65 marks?

Ans: \_\_\_\_\_ [3]

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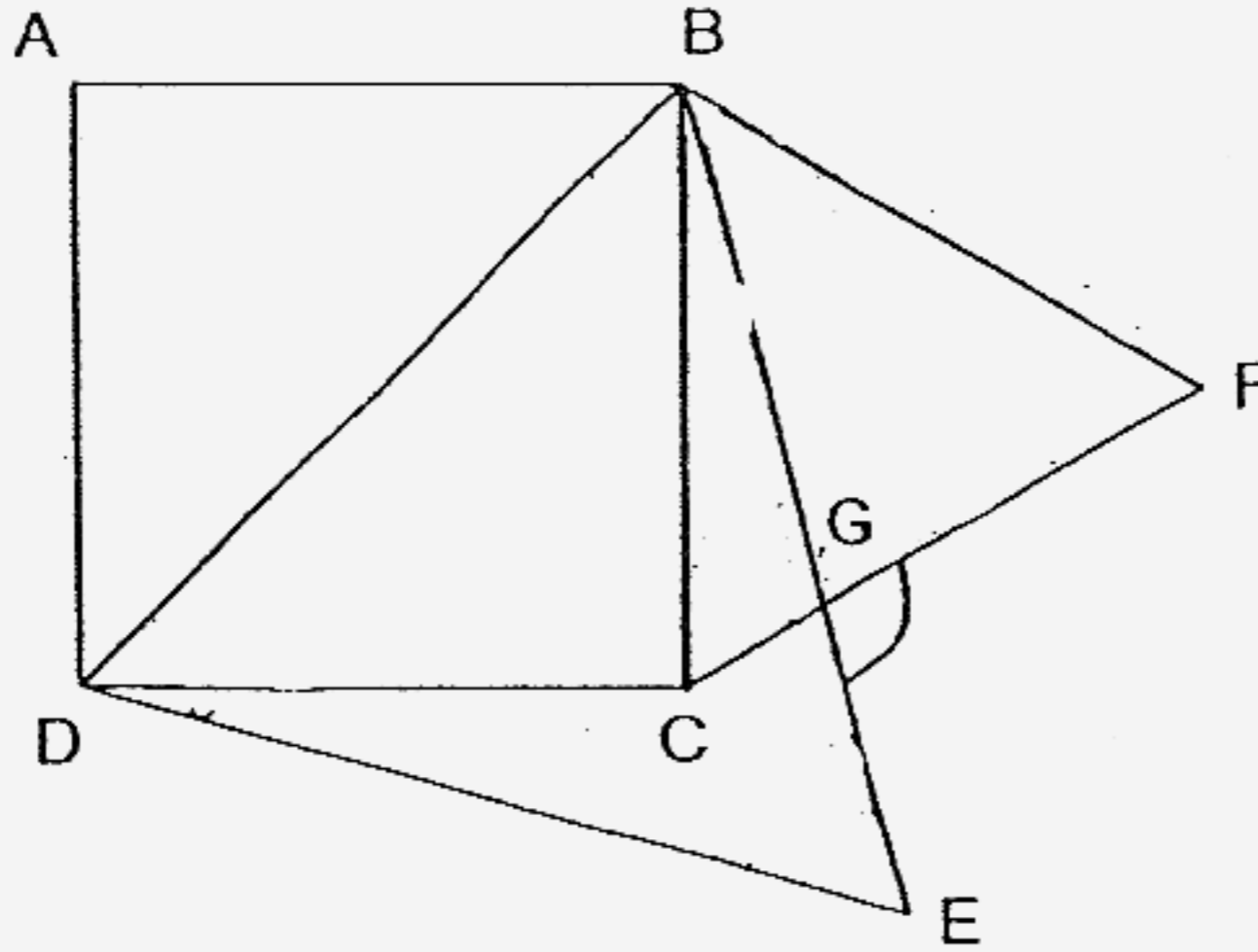
- 37 In the figure, not drawn to scale, AB is parallel to CD. What is  $\angle BEF$ ?



Ans: \_\_\_\_\_ [3]

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- 38 In the figure, not drawn to scale, ABCD is a square. BDE and BCF are equilateral triangles. What is  $\angle FGE$ ?



Ans: \_\_\_\_\_ [3]

- 39 Leela, Siti and Jane shared \$264. Siti had \$  $k$  less than Leela and Jane had twice as much as Siti.

- (a) How much did Siti have in terms of  $k$ ?  
 (b) If  $k = \$8$ , how much did Leela and Jane have altogether?

Ans: (a) \_\_\_\_\_ [1]

(b) \_\_\_\_\_ [2]

- 40 Fara started collecting stamps in January. In each month from February to May, she collected 30 stamps more than the month before. She saved a total of 750 stamps from January to May. How many stamps did she collect in January?

Ans: \_\_\_\_\_ [4]

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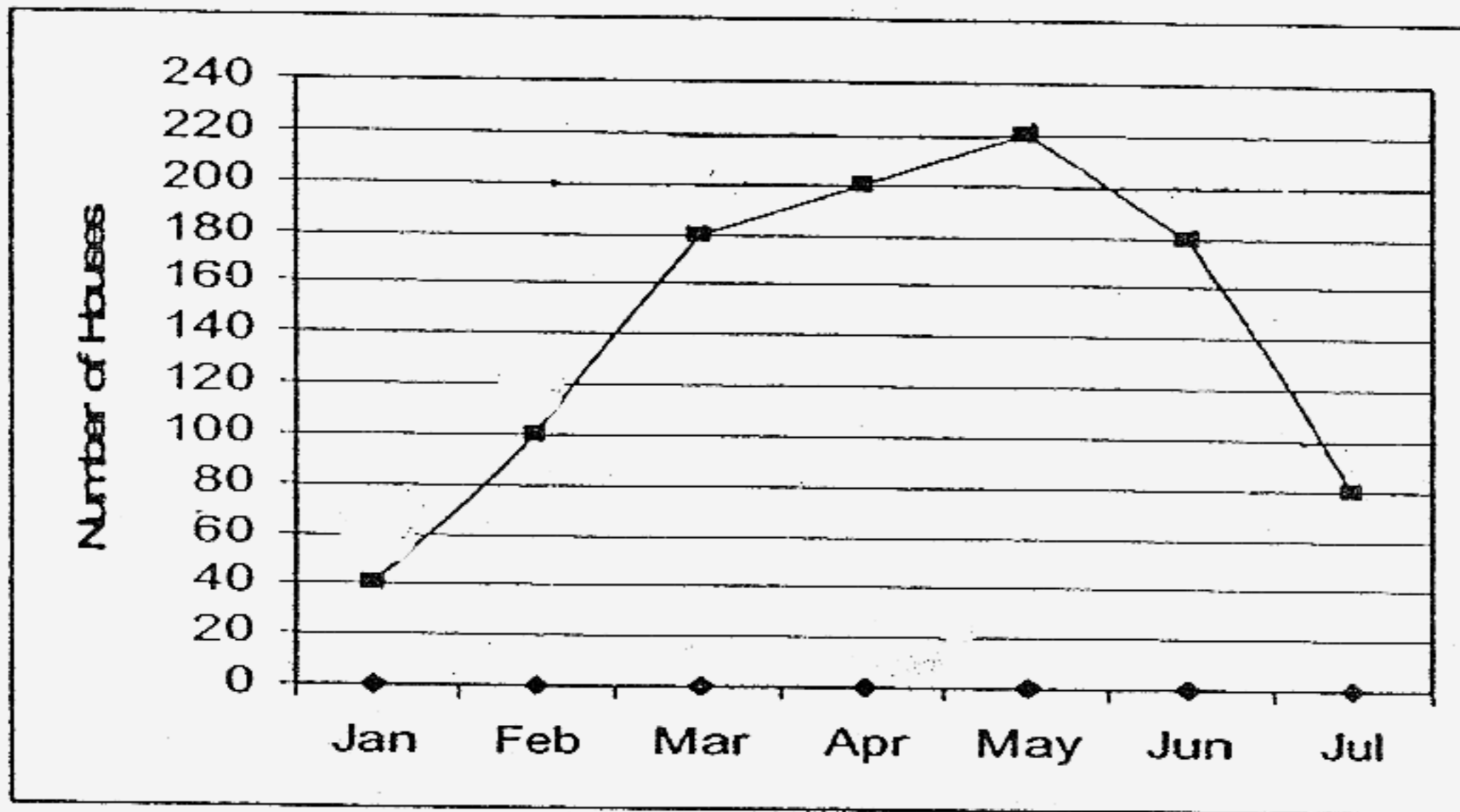
- 41 Alex has \$1.50 more money than Betty, and three times as much money as Colin. The 3 of them have \$9.70 altogether. How much does Colin have?

Ans: \_\_\_\_\_ [4]

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42 The graph below shows the number of houses built during the period from January to July.

- (a) What was the average number of houses built during March to June?
- (b) What percentage of the total number of houses built was the month of April?



Ans: (a) \_\_\_\_\_ [2]

(b) \_\_\_\_\_ [2]

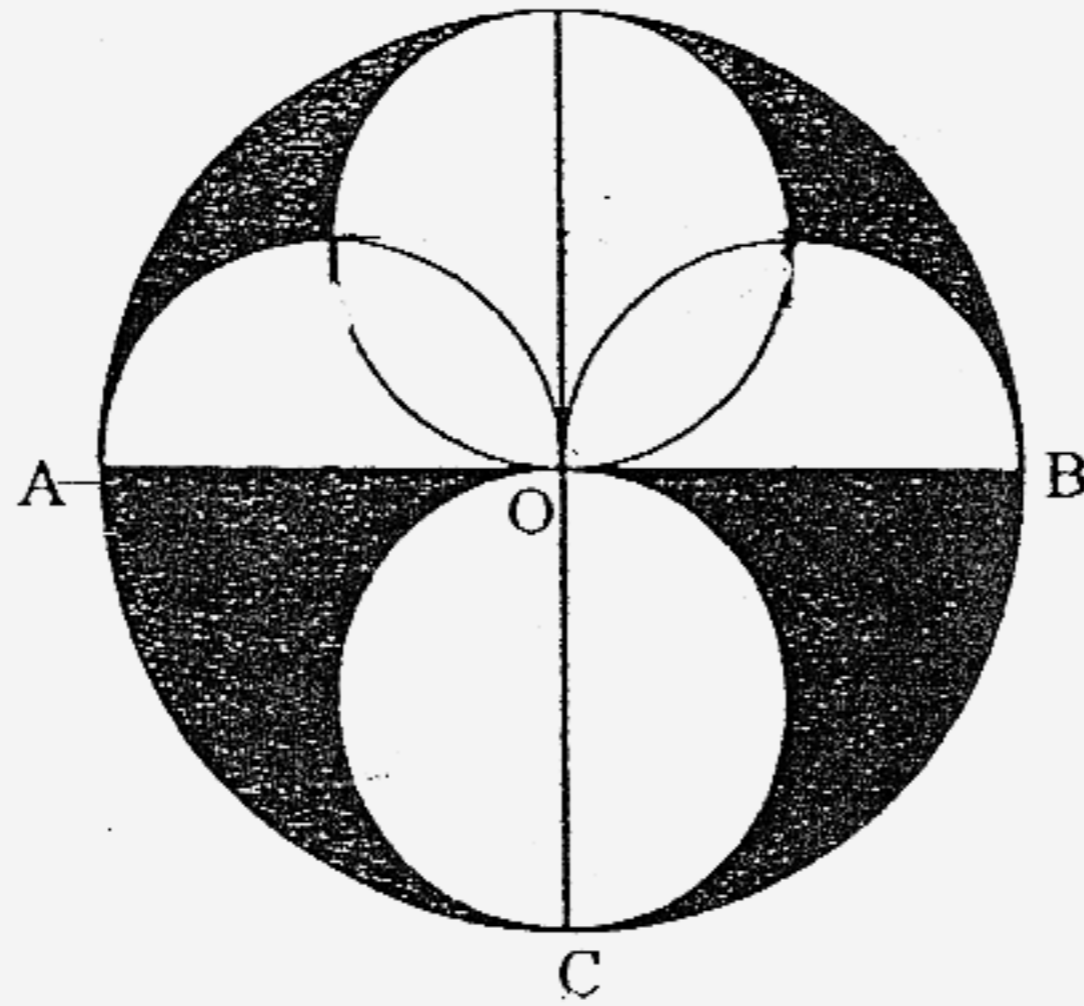
43. Derrick had  $\frac{2}{3}$  as many stickers as Benedict. After Derrick bought another 8 stickers and Benedict lost 5 stickers, Derrick now has  $\frac{4}{5}$  as many stickers as Benedict. Find the number of stickers Derrick and Benedict had at first.

Ans: \_\_\_\_\_ [4]

- 44 Marvin bought a box of fruits. 30% of the fruits are apples and the rest oranges. He realised that half of the apples were rotten and threw them away. He then bought some oranges and the number of oranges increased by 40%. After that, he found out that there were 52 more fruits in the box. How many fruits were there in the box at first?

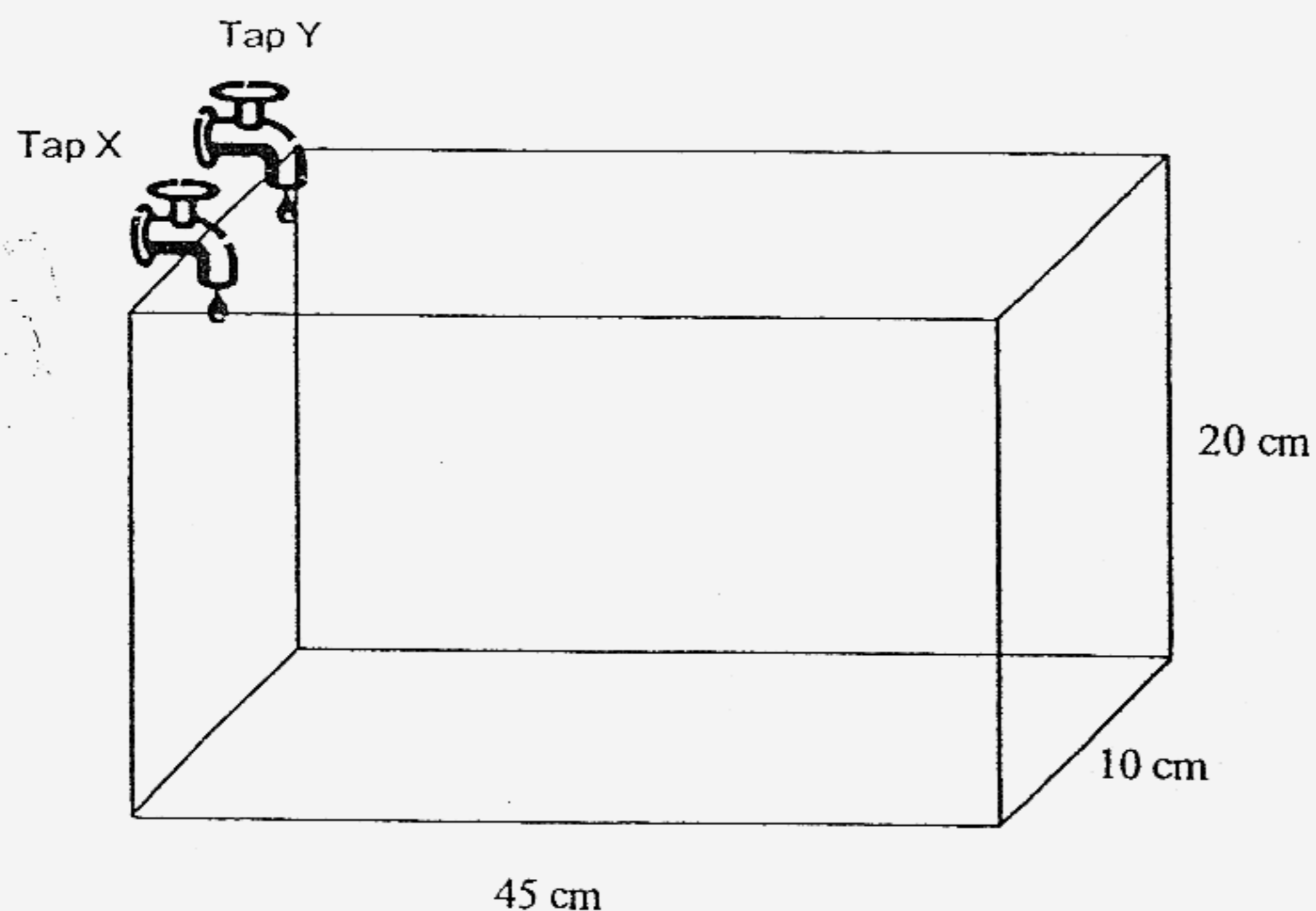
Ans: \_\_\_\_\_ [4]

- 45 The figure is made up of three circles and two semi-circles. O is the centre of the circle. AB is 42 cm. Find the total area of the shaded part.  
(Take  $\pi = \frac{22}{7}$ )



Ans: \_\_\_\_\_ [4]

46



A rectangular container measuring 45 cm by 10 cm by 20 cm is empty at first. Water flows from Tap X at a rate of 1.3 litres per minute and Tap Y at a rate of 1.2 litres per minute. How long does it take to completely fill up the container if both taps are turned on at the same time? Give your answer in minutes and seconds.

Ans: \_\_\_\_\_ [4]

- 47 In an auditorium, the ratio of the number of competitors to the number of non-competitors is 8 : 5. The ratio of the number of male competitors to the number of female competitors is 7 : 4. Given that  $\frac{3}{5}$  of the non-competitors are males and there are 32 female competitors, how many males and females are there in the auditorium?

Ans: \_\_\_\_\_ males

Ans: \_\_\_\_\_ females [5]

- 48 Mr Goh was travelling from Town X to Town Y. After completing  $\frac{2}{7}$  of the journey, he passed by Mr Lee travelling the same direction. Mr Lee was travelling at an average speed of 60 km/h. Mr Goh reached his destination 3 hours later, while Mr Lee was still 45 km away from Town Y.
- a) Find the distance between the two towns.
  - b) If Mr Lee left Town X at 11.30 a.m., what time would he arrive at Town Y?

Ans: (a) \_\_\_\_\_ [3]

(b) \_\_\_\_\_ [2]

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END OF PAPER

B-18

Sub-total:

Anglo-Chinese Junior / Primary School

Primary 6 Maths SA2 Exams (2007)

*Answers Key*

Q1	Q2	Q3	Q4	Q5
14	1	2	3	2
Q6	Q7	Q8	Q9	Q10
3	4	2	3	1
Q11	Q12	Q13	Q14	Q15
2	3	3	3	3

16. 3085  
17. \$108

18. \$5.25  
19. 56

20. 1hr 40mins

21. 1kg 250g  
22. 3.35m

23.  $\frac{2}{5}$

24. 15

25. 971

26. 104cm<sup>3</sup>

28. 10

30. 180 beads

32. 8 mins

34. 16 workers

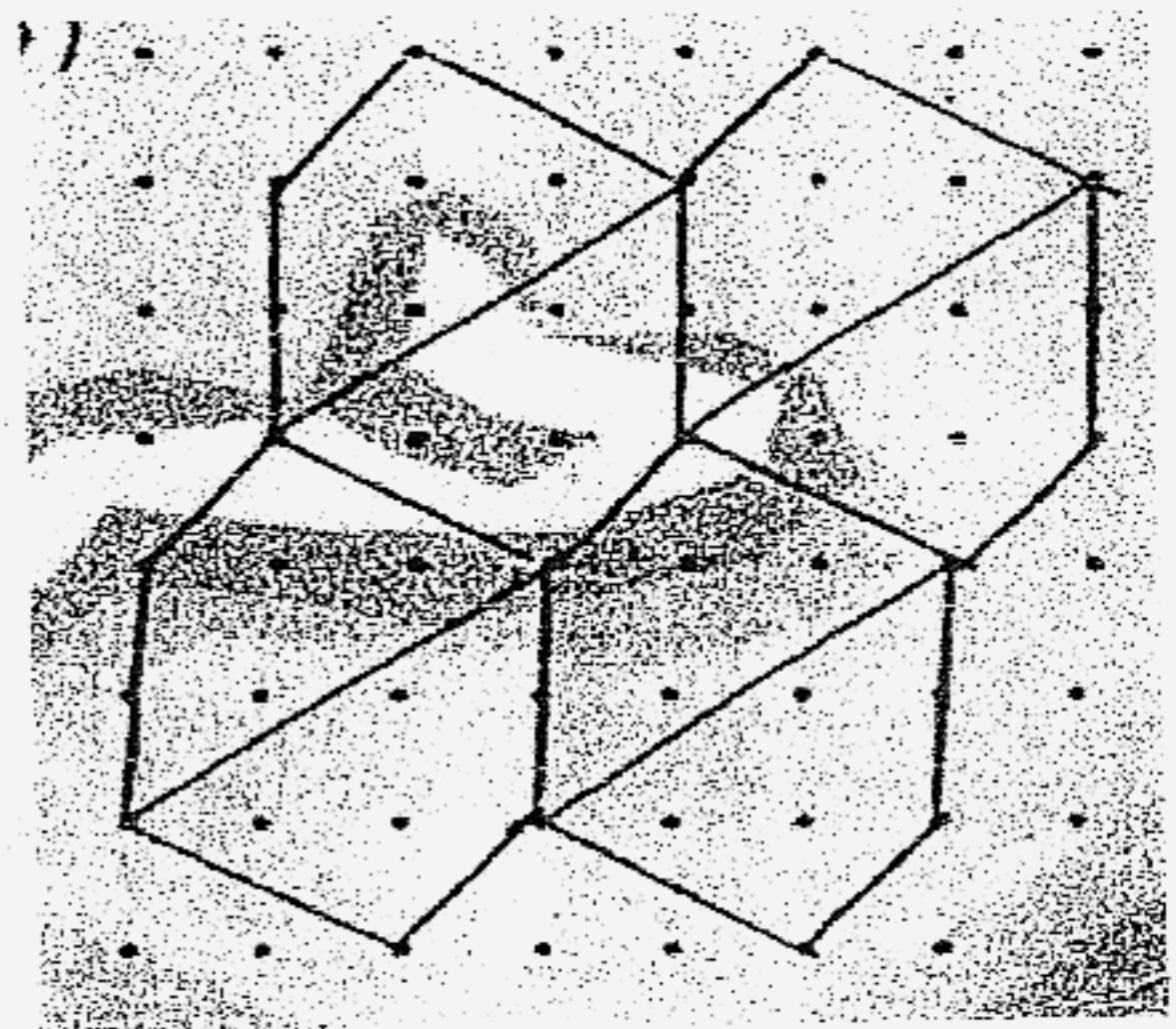
27. 84 coins

29. \$9.50

31. 36

33. \$28

35.



36.  $56 \times 3 = 168$   
 $65 \times 4 = 260$   
 $260 - 168 = 92$   
**She has to score 92 marks**

38.  $60^\circ - 45^\circ = 15^\circ$   
 $15^\circ + 60^\circ = 75^\circ$   
 $180^\circ - 75^\circ = 105^\circ$   
  
 $180^\circ - 105^\circ = 75^\circ$   
 **$\angle FGE$  is  $105^\circ$**

40.  $10 \times 30 = 300$   
 $750 - 300 = 450$   
 $450 \div 5 = 90$   
**She collected 90 stamps in January**

42a.  $180 + 200 + 220 + 180 = 780$   
 $780 \div 4 = 195$   
**The average number is 195 houses**

42b.  $40 + 100 + 180 + 180 + 200 + 220 + 80$   
 $= 1000$   
 $\frac{200}{1000} \times 100 = 20\%$   
**The percentage is 20%**

37.  $130^\circ - 70^\circ = 60^\circ$   
 $40^\circ + 60^\circ = 100^\circ$   
 **$\angle BEF = 100^\circ$**

39a.  $\frac{\$(264 - k)}{4}$

39b.  $204 - 8 = 256$   
 $256 \div 4 = 64$   
 $64 \times 3 = 192$   
 $192 + 8 = \$200$

41.  $\$9.70 + \$1.50 = \$11.20$   
**7 units = \$11.20**  
**1 unit =  $\$11.20 \div 7$**   
**= \$1.60**  
**Colin has \$1.60**

43. **150 stickers**

44.  $\frac{70}{100} \div \frac{40}{100} \times 70\%$   
 $= 28\%$   
  
 $30\% \div 2 = 15\%$   
 $28\% - 15\% = 13\%$   
 $1\% = \frac{52}{13}$   
 $100\% = \frac{52}{13} \times 100 = 400$

45. Area of big circle =  $\pi r^2$   
 $= \frac{22}{7} \times 42\text{cm} \times 42\text{cm}$   
 $= 5544\text{cm}^2$

$42\text{cm} \div 4 = 10.5\text{cm}$   
 $10.5\text{cm} \times 10.5\text{cm} = 110.25\text{cm}^2$

Area of small circle ( $\pi r^2$ ) =  $\frac{22}{7} \times 10.5 \times 10.5$   
 $= 346.5\text{cm}^2$

Area of small quadrant =  $346.5\text{cm}^2 \times \frac{1}{4}$   
 $= 86.625\text{cm}^2$

$110.25\text{cm}^2 - 86.625\text{cm}^2 = 23.625\text{cm}^2$   
 $23.625\text{cm}^2 \times 2 = 47.25\text{cm}^2$

Overlap Area =  $110.25\text{cm}^2 - 47.25\text{cm}^2$   
 $= 63\text{cm}^2$   
 $= 346.5\text{cm}^2 - 63\text{cm}^2$   
 $= 283.5\text{cm}^2$

$= (346.5 \times 2) \text{cm}^2 + 283.5\text{cm}^2$   
 $= 693 \text{cm}^2 + 283.5\text{cm}^2$   
 $= 976.5\text{cm}^2$   
 $= 5544\text{cm}^2 - 976.5\text{cm}^2$   
 $= 4567.5\text{cm}^2$

48a.  $60 \times 3 = 180$   
 $180 + 45 = 225$   
 $7 - 2 = 5$   
 $5 \text{ units} = 225$   
 $1 \text{ unit} = 45$   
 $7 \text{ units} = 45 \times 7$   
 $= 315$

The distance is 315km

46.  $45 \times 10 \times 20 = 9000$   
 $1.3 + 1.2 = 2.5$   
 $2.5 + 2500\text{ml}$   
 $9000 \div 2500 = 3.6$

$3 \frac{6}{10}$   
 $3 \frac{36}{60}$

It takes 3 mins 36 seconds

47.  $5 - 3 = 2$   
 $7 \times 8 = 56$   
 $56 + 32 = 88$

$8 \text{ units} = 88$

$1 \text{ unit} = 11$

$5 \text{ units} = 55$

Male =  $11 \times 3 + 56$

$= 33 + 56$

$= 89$

Female =  $11 \times 2 + 32$

$= 11 + 32$

$= 54$

There are 89 males and 54 females.

48b.  $11\text{hrs } 30\text{mins} + 5\text{hrs } 15\text{mins}$   
 $= 16\text{hrs } 45\text{mins}$

Mr Lee arrived at 4.45pm