Index No. | | | | | | – | |

NANYANG PRIMARY SCHOOL

PRELIMINARY EXAMINATION 2007

PRIMARY 6

MATHEMATICS

DURATION: 2 HOUR 15 MINUTES

Booklet A	/ 20
Booklet B	/ 30
	/ 50

Total: / 100

Name: _____ ( )

Class: Primary 6 ( )

Date: 21 August 2007

Parent's Signature: _____

WRITE YOUR INDEX NO. IN THE BOXES AT THE TOP RIGHT HAND CORNER.

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

FOLLOW ALL INSTRUCTIONS CAREFULLY.

ANSWER ALL QUESTIONS.

Booklet A

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.

(20 marks)

---

1 What is the value of the number that is represented on the place value chart?

Ten thousands	Thousands	Hundreds	Tens	Ones
				

(1) 50 thousands and 320 tens

(2) 53 hundreds and 20 ones

(3) 503 hundreds and 20 ones

(4) 503 thousands and 20 tens

2 A number lies between 84 and 90. Which of the following cannot be a factor of this number?

(1) 17

(2) 27

(3) 29

(4) 43

3 Δ represents a value between 1 and 3. Which expression has the largest value?

(1) $\frac{\Delta+3}{\Delta}$

(2) $\frac{\Delta+3}{3}$

(3) $\frac{3-\Delta}{3}$

(4) $\frac{3-\Delta}{\Delta}$

4 Alice had a piece of string 2 m 4 cm long. She cut off 1.4 m from it. What is the length of the remaining string?

(1) 190 cm

(2) 136 cm

(3) 100 cm

(4) 64 cm

5 Jane parked her car at a car park which charged a fixed rate of 3 cents per minute. How much did Jane have to pay if she entered the car park at 10 50 and left at 13 48?

(1) 534¢

(2) 654¢

(3) 774¢

(4) 894¢

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6 If Andrew walks to the city and cycles back, he will take 6 hours. If he walks both ways, he will take 8 hours. How many hours will he take if he cycles both ways? (Assume that Andrew's walking and cycling speeds do not change)

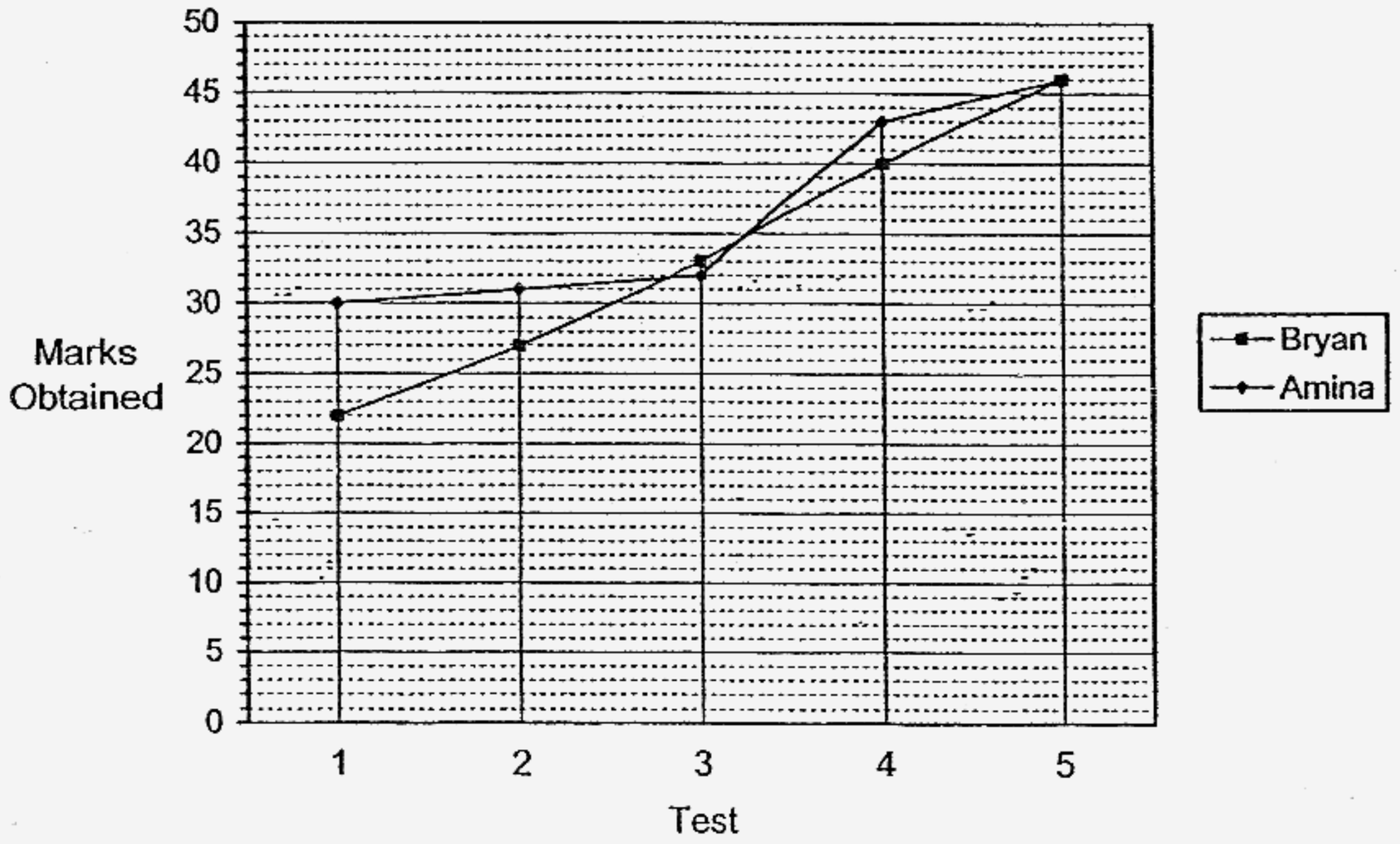
(1) 14

(2) 2

(3) 7

(4) 4

7 The graph shows the marks obtained by Amina and Bryan in 5 tests.



Find the difference in the improvement shown by the two pupils from Test 3 to Test 4.

(1) 1

(2) 2

(3) 3

(4) 4

8 The length of a rectangle is increased by 20% and its breadth is decreased by 20%. Express the area of the new rectangle as a percentage of the area of the original rectangle.

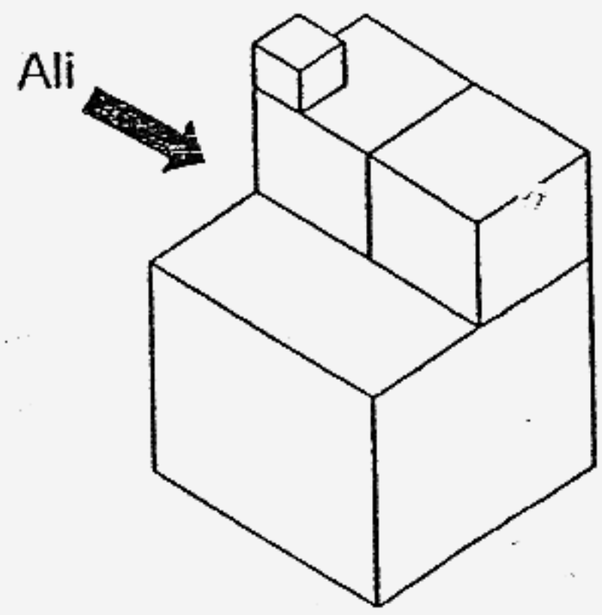
(1) 64%

(2) 96%

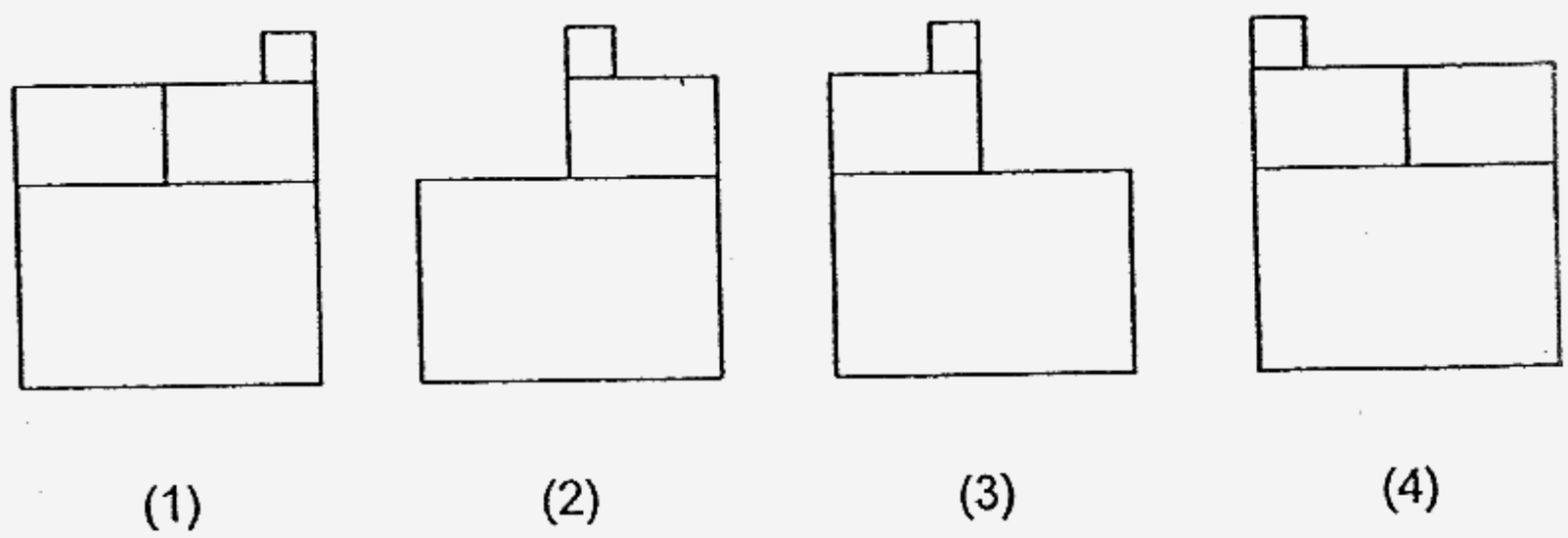
(3) 100%

(4) 144%

9 Ali is looking at the object from the position as shown.

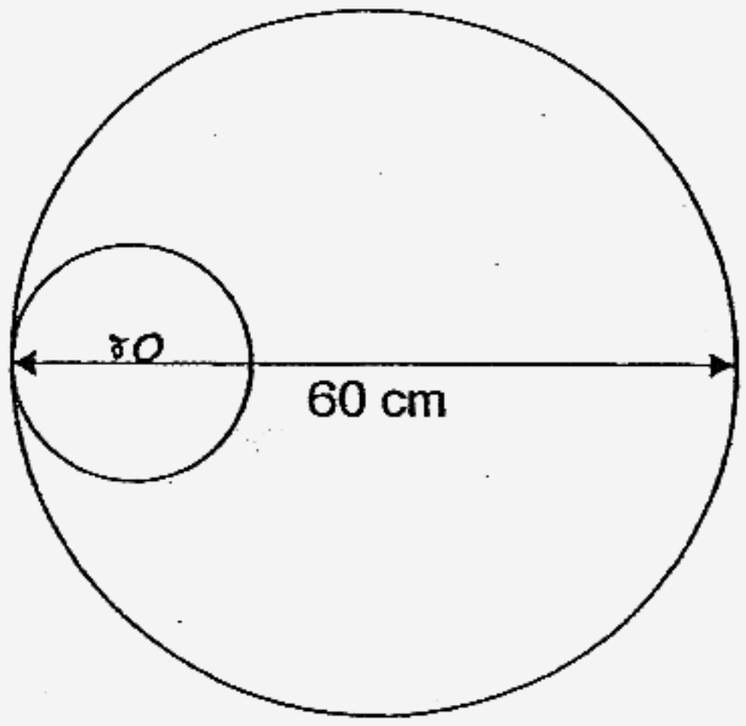


Which of the following shows the correct view from his position?



(1) (2) (3) (4)

10 The figure is made up of 2 circles. The radius of the big circle is 3 times the radius of the small circle. What is the difference in the circumferences of the two circles?



(1) 20π cm

(2) 40π cm

(3) 80π cm

(4) 800π cm

11 What is the missing number in the box?

$$6 \times 6 + \square \div 9 - 8 = 40$$

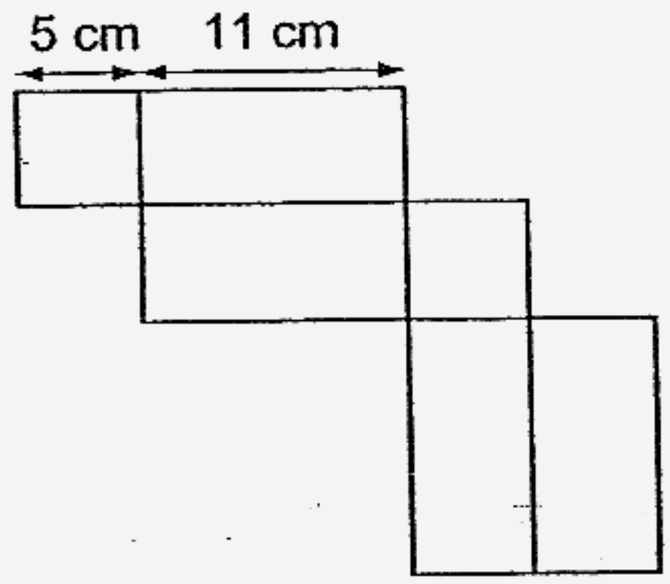
(1) 4

(2) 108

(3) 332

(4) 396

12 The figure shows the net of a cuboid with a square base. What is the maximum number of 2-cm cubes that can be packed into the cuboid?



(1) 20

(2) 34

(3) 68

(4) 137

13 A bus departed from the bus interchange with $\frac{4}{5}$ of the passenger load. $\frac{3}{8}$ of the passengers were women, $\frac{1}{4}$ were men and the rest were children. If there were 30 children on the bus, what is the full passenger load?

(1) 60

(2) 80

(3) 100

(4) 150

14 Given that $\frac{2}{3}$ of Alan's money is equal to 75% of Tim's money, what fraction of Tim's money is the total sum of money?

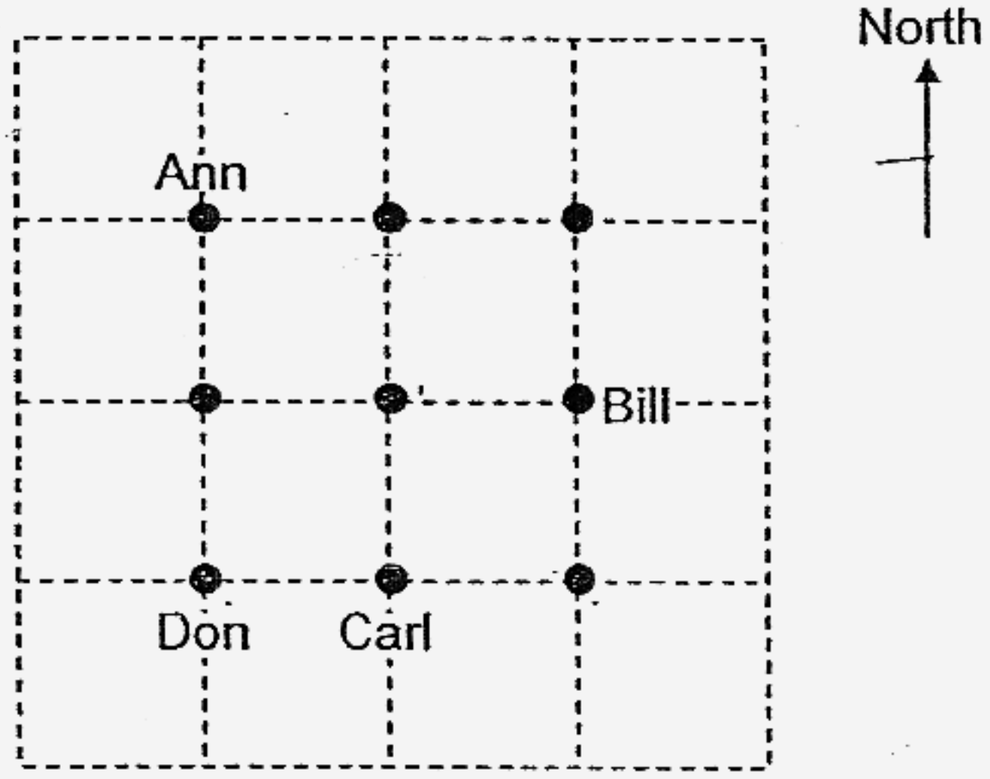
(1) $\frac{8}{17}$

(2) $\frac{9}{17}$

(3) $\frac{17}{8}$

(4) $\frac{17}{9}$

15 The grid shows the seating arrangement of 9 pupils. Elvis is seated southeast of Fion. Guohao is seated 135° anticlockwise from Halimah. Who is seated west of Ian?



(1) Carl

(2) Don

(3) Guohao

(4) Halimah

Name: _____( ) Class: Pr 6 ( )

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Booklet B

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 A total of $349 549 was collected on a flag day. Express this value to the nearest hundred thousand dollars.

Ans: $ _____

---

17 John started his lessons at 7.30 a.m. and he was supposed to have a break at 10.15 a.m. After $2\frac{3}{5}$ h into the lessons, he was given his break earlier. How much earlier was his break?

Ans: _____ min

---

18 What percentage of 5 km is 20 m 50 cm?

Ans: _____ %

---

19 A mixture, weighing 100 kg is made up of 2 chemicals A and B in the ratio 7 : 3. When some volume of Chemical A evaporates, the content of Chemical A is reduced to 60% of the new mixture. What is the mass of the mixture now?

Ans: _____ kg

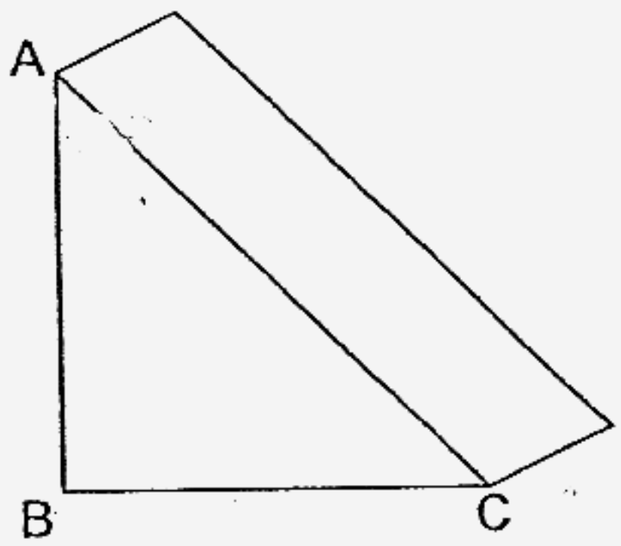
---

20 Five identical pencils cost $6y. How much would 9 such pencils cost?

Ans: $ _____

---

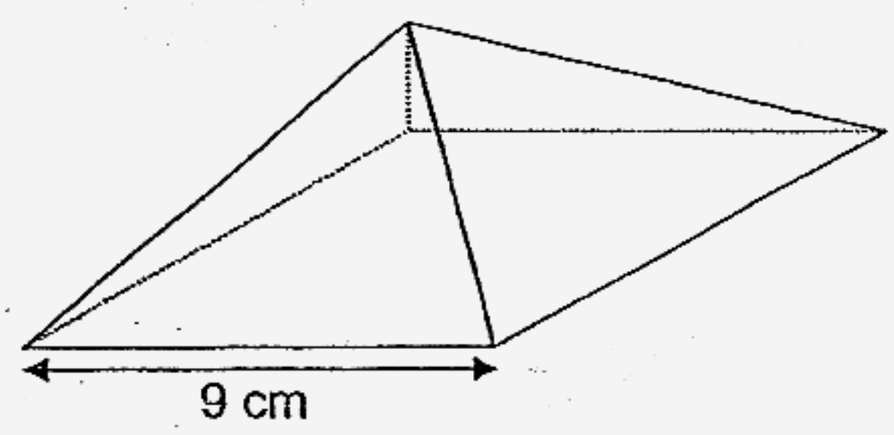
21 The figure shows a triangular prism with AB = BC. How many different ways are there to cut the prism into 2 identical parts with a single cut?



Ans: _____

---

22 The figure shows a pyramid with a square base of side 9 cm. The sides are made up of equilateral triangles.

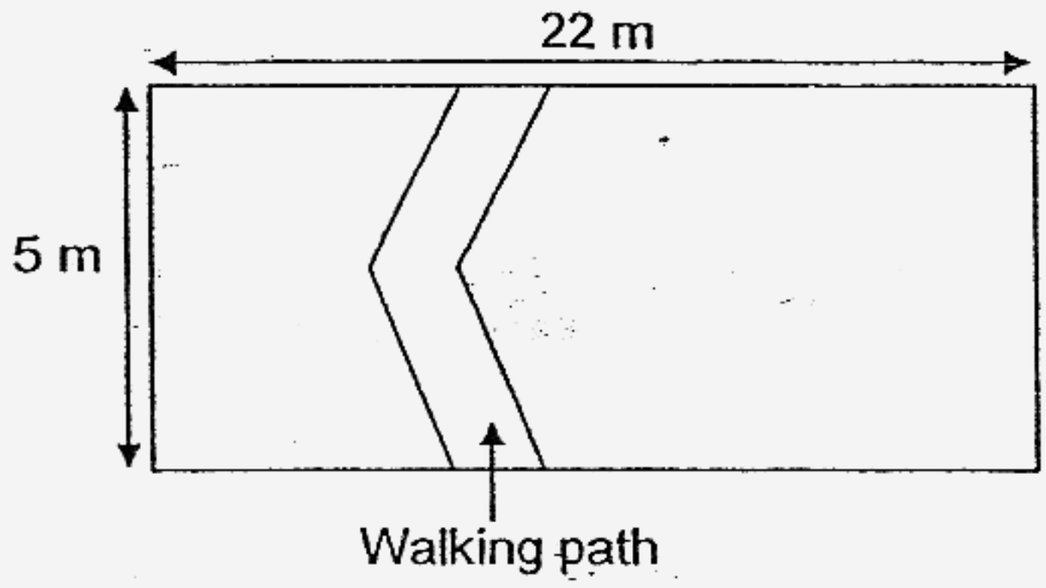


What is the perimeter of the net of the above solid?

Ans: _____ cm

---

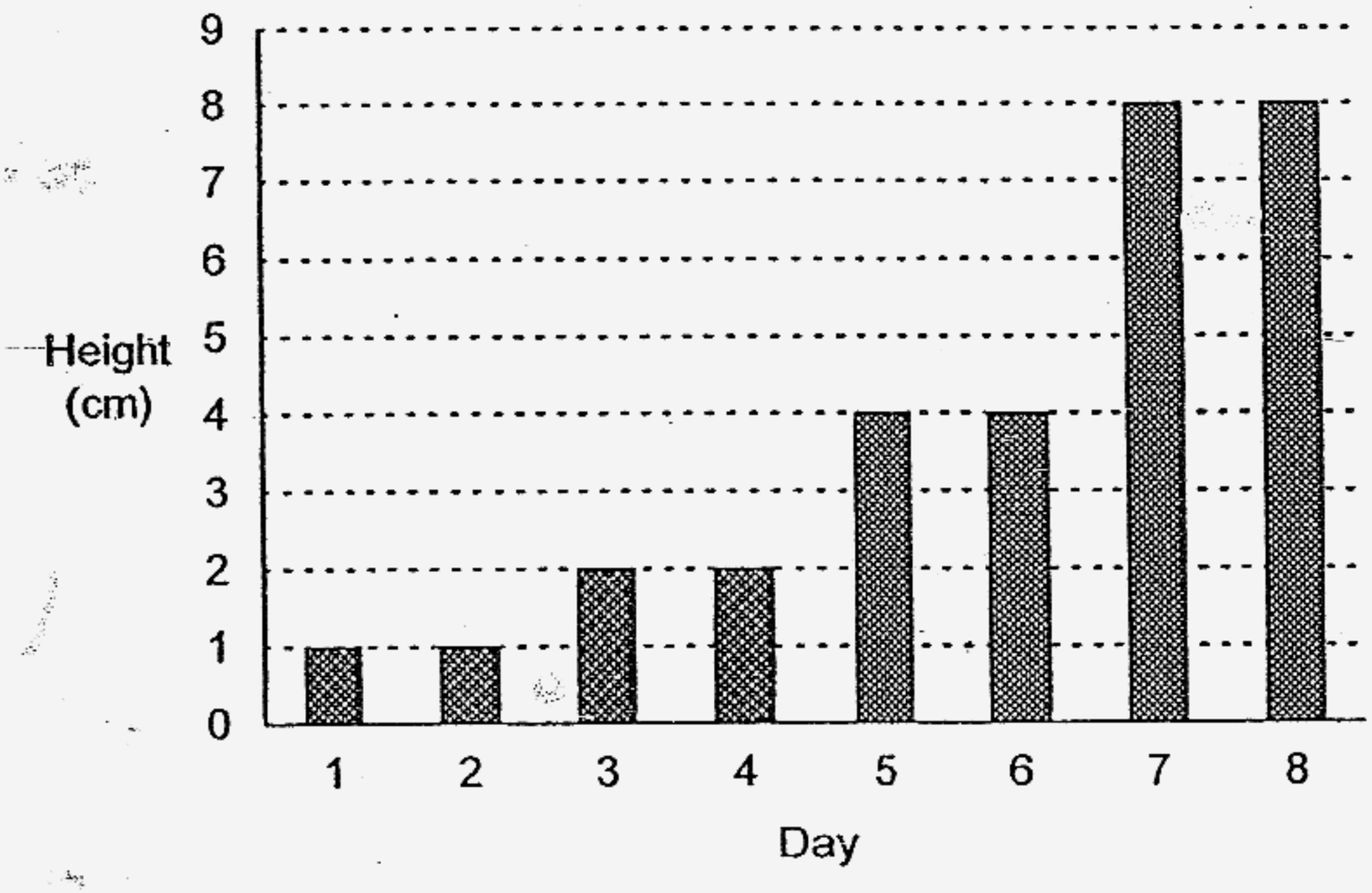
23 The figure shows a rectangular grass field with a cemented walking path of constant width 2 m. Mr Lim mows the grass at a rate of 10 m^2 per minute. How long will it take him to mow the field completely?



Ans: _____ min

---

24 Wei Wei started growing a plant and he charted its growth in the graph below. A growth pattern of the plant was observed.

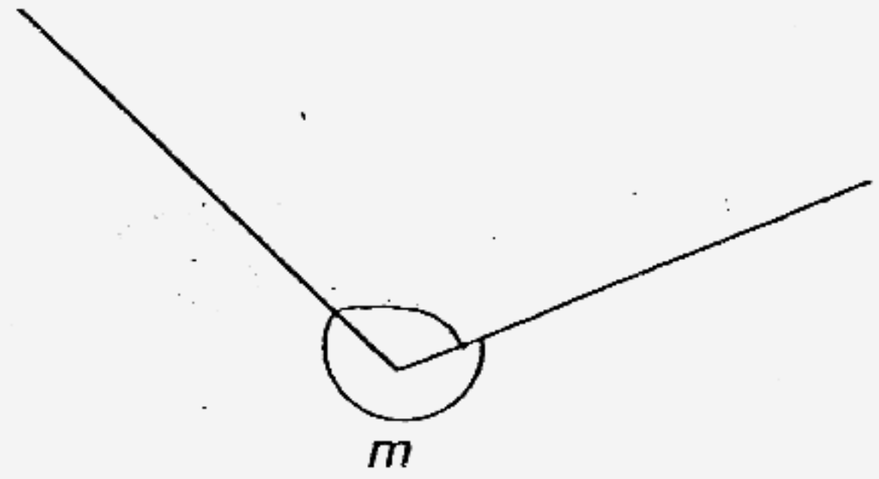


How tall will the plant be on Day 16?

Ans: _____ cm

---

25 The figure shows 2 straight lines. Measure and write down the size of the angle marked *m*.



Ans: _____ °

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 questions which require units, give your answers in the units stated.

(20 marks)

---

26 Arrange these numbers in descending order:

$\frac{2}{50}$, 0.309, $\frac{1}{3}$, 0.065

Ans: _____

---

27 There are 5 identical dictionaries and 10 identical textbooks on the shelf. Each textbook weighs $\frac{1}{5}$ kg and each dictionary is $3\frac{1}{2}$ times as heavy as the textbook. When 3 dictionaries are removed from the shelf, what is the total mass of the remaining books?

Ans: _____ kg

---

28 Jug A and Jug B are filled to the brim. If all the water in Jug A is poured into Container C, it is 28 litres short of completely filling it. If all the water in Jug B is poured into Container C, it is 35 litres short of completely filling it. If the water in Jug A and B is combined, it will completely fill Container C. How much water is in Jug A when it is $\frac{1}{7}$ filled?

Ans: _____ litres

29 A group of boys and girls went on a fieldtrip. Excluding Tom and Peter, the number of boys was $\frac{2}{3}$ the number of girls. The number of girls was 1 more than the number of boys. When another 3 girls joined the group, what fraction of the children were girls? Give your answer in its simplest form.

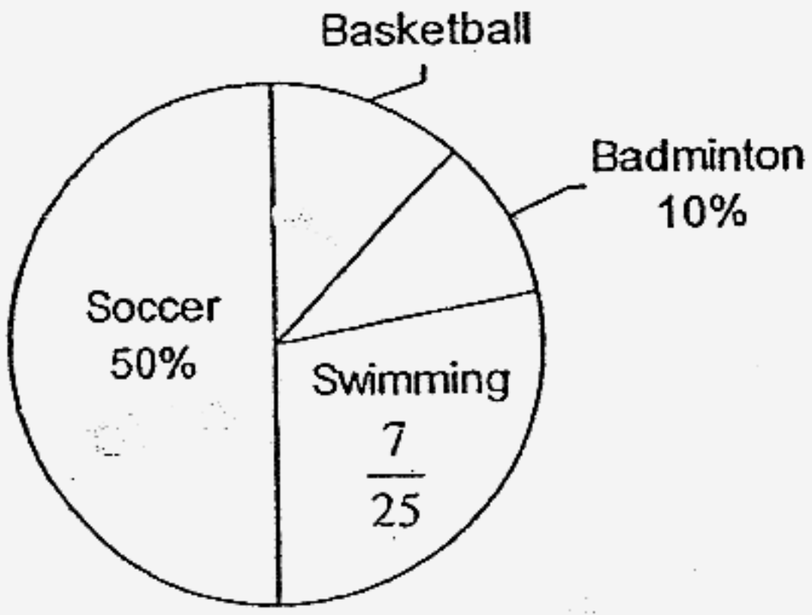
Ans: _____

30 How many different ways are there to arrange 4 children if they are standing in a row?

Ans: _____

---

31 The pie chart below shows the number of pupils who like the various sports.



If 300 pupils like soccer, how many pupils like basketball?

Ans: _____

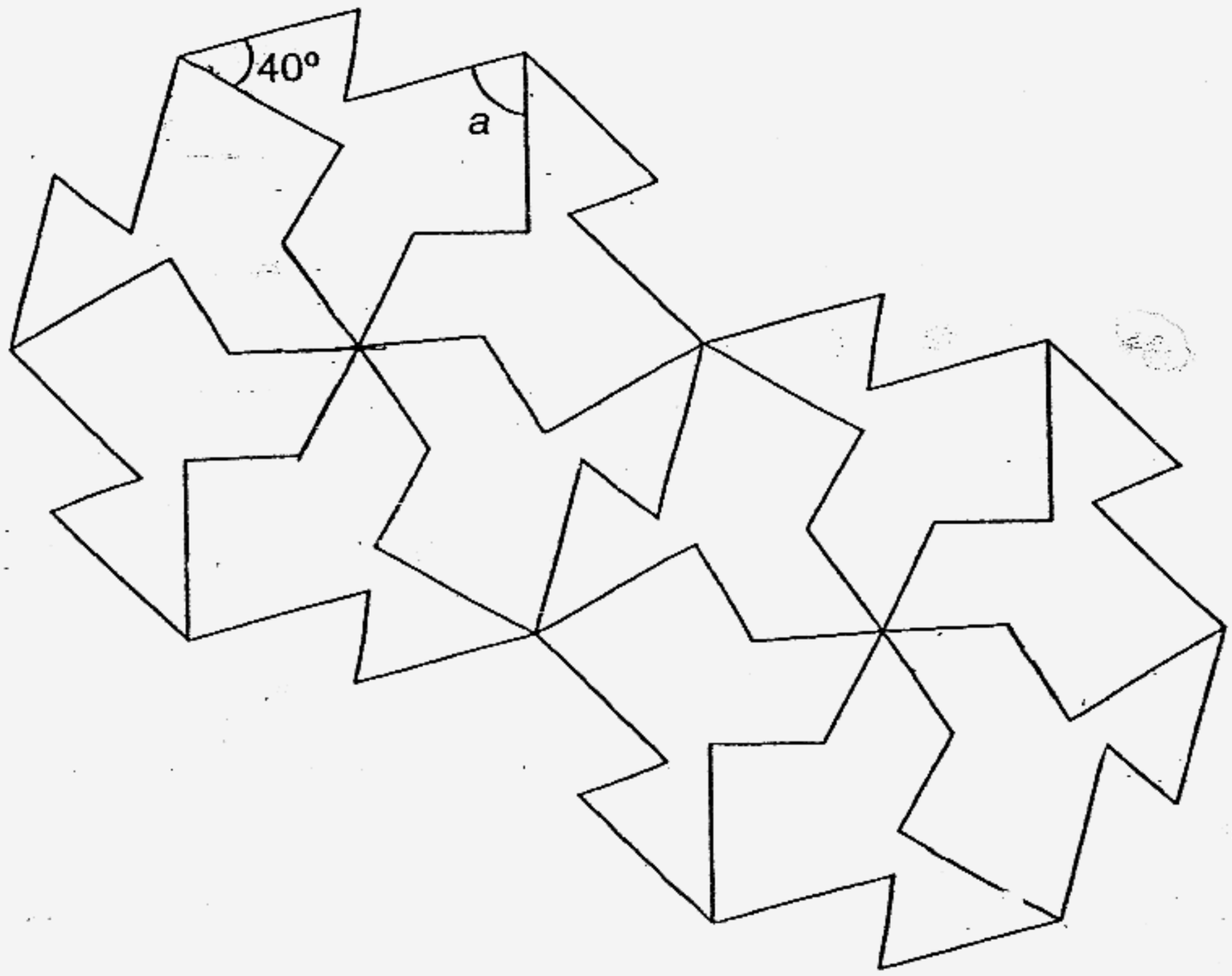
---

32 A soccer tournament is organised for 8 teams. Each team has to play with every other team. How many matches will be played in all?

Ans: _____

Use the figure given below to answer questions 33 and 34.

The pattern in the figure shows part of a tessellation.



33 (a) Shade a unit shape of the tessellation.

(b) Mark a pair of vertically opposite angles on the figure. Label the angles as b and c.

---

34 In the figure, find $\angle a$.

Ans: _____ °

---

35 A rectangular piece of paper is folded along AC at Corner B as shown in Figure 1 so that the line BC lies on the centre line.

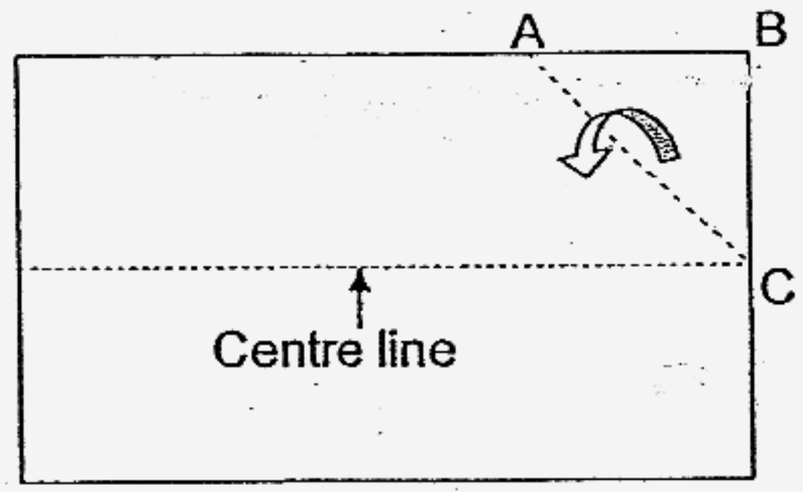


Figure 1

Next, it is folded along DC as shown in Figure 2 so that the line AC lies on the centre line.

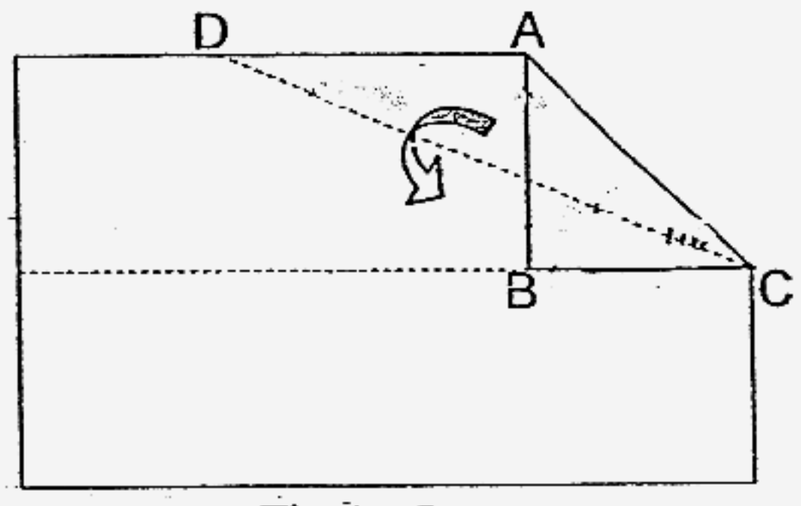


Figure 2

Finally, it is folded along EF as shown in Figure 3 so that the line GD lies on the centre line.

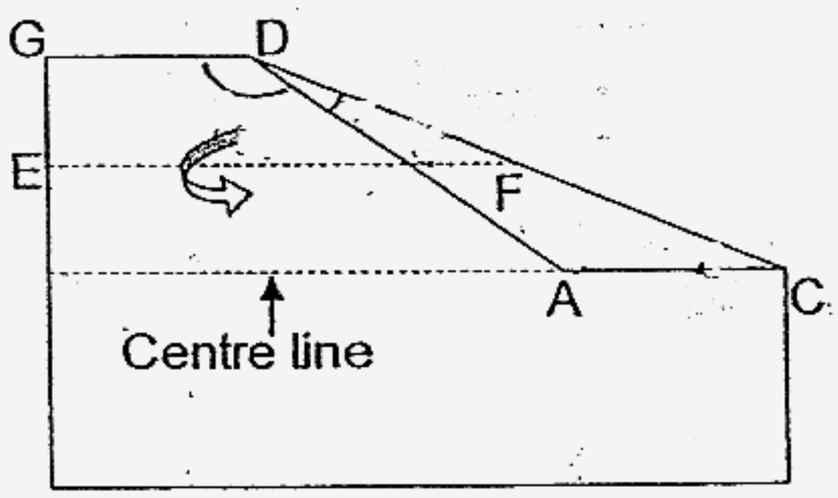


Figure 3

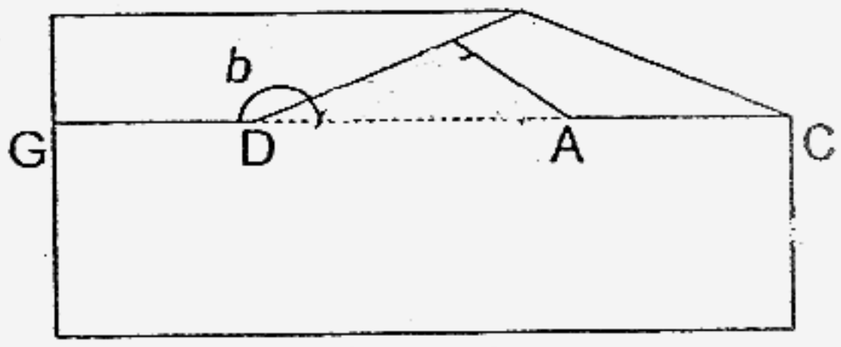


Figure 4

Find ∠b.

Ans: _____ °

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)

---

36 A group of w boys planned a camping trip and they bought food to last them for 35 days. If $6w$ more boys joined the camp, how many days would the same amount of food last?

Ans: _____ [3]

---

37 The table below shows the statistics of a town's population. However, some data has been accidentally deleted.

Population	40000
Below 15 years old	
15 – 64 years	
65 years and over (Elderly)	5500
Support Ratio (Number of Residents Aged 15 – 64 Years Per Elderly Resident)	6

What percentage of the citizens in the town are below 15 years old?

Ans: _____ [3]

---

38 Tom worked 20 days in August. He gave 0.15 of his salary to his mother, used $\frac{4}{5}$ of the remainder and saved the rest. He saved a total of $340 in August. How much did he receive for a day's work?

Ans: _____ [3]

---

39 Mr Yeo earned a monthly salary of $3000 which was 20% more than the monthly salary of Mr Poon.

(a) What was Mr Poon's monthly salary?

(b) When both Mr Yeo and Mr Poon's monthly salaries were increased by the same percentage, Mr Yeo would earn $590 more than Mr Poon. What was the percentage increase in their salaries?

Ans: (a) _____ [1]

(b) _____ [2]

---

40 Four children made the following statements.

Walter: The average of Yo Yo's mass and my mass is 29 kg.
Xaviar: I am the heaviest.
Yo Yo: Zenith is 2 kg lighter that Xaviar.
Zenith: Our masses are in consecutive order (in running sequence).

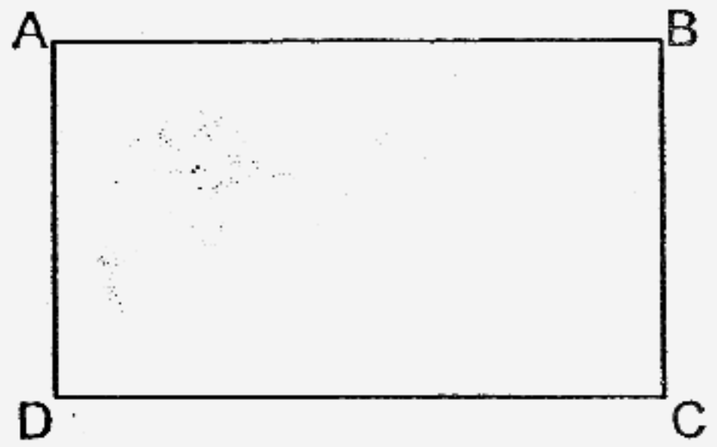
What is the total mass of Walter, Xaviar and Yo Yo?

Ans: _____ [3]

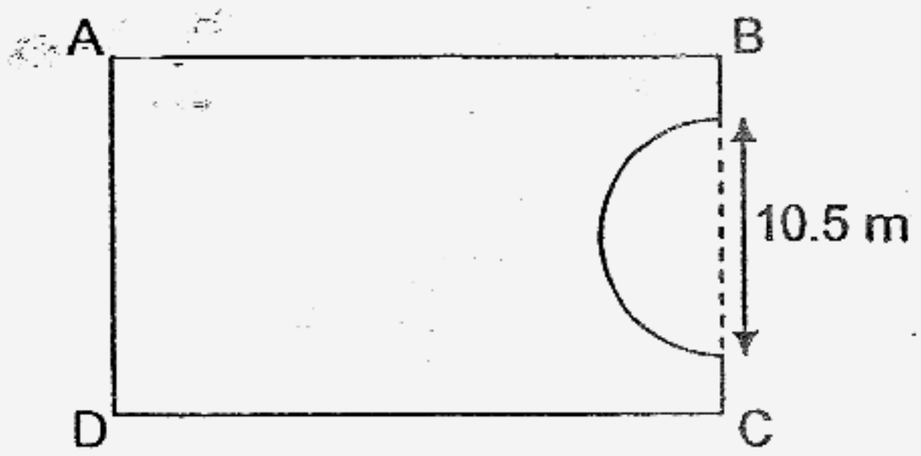
41 Mrs Samy made a deal with her son, Raju, that for every night he spent reading, he would get 2 stickers. For every night that he did not read, he would give her back 1 sticker. The deal lasted 30 days and Raju collected 24 stickers in all. How many nights did Raju spend reading?

Ans: _____ [3]

42 (a) The figure shows a rectangular field ABCD. Mike walked from A to B to C to D and he covered a distance of 57 m. Sandy walked from B to C to D to A and she covered a distance of 48 m. What is the perimeter of the field?



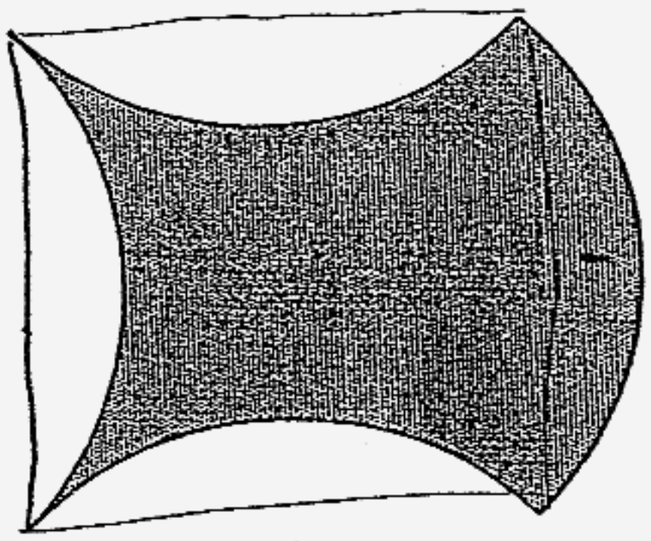
(b) Some construction work was undertaken on the same field and a semi-circular part was removed from it. What is the perimeter of the field after the construction? (Take $\pi = \frac{22}{7}$)



Ans: (a) _____ [2]

(b) _____ [2]

43 . The shaded figure is made up of 4 quarter arcs of radius 10 cm. Find its area. (Take $\pi = 3.14$)



Ans: _____ [4]

44 The tickets for a show are priced at \$10 and \$5. The number of ten-dollar tickets available is $1\frac{1}{2}$ times the number of five-dollar tickets. 5 out of 6 ten-dollar tickets and all the five-dollar tickets were sold. The ticket sales amounted to \$5600. How much **more** would have been collected if all the tickets were sold?

Ans: _____ [4]

45 A rectangular tank measuring 60 cm by 35 cm by 40 cm is half filled with water. If Tap A is turned on, it will take 6 minutes to fill the remaining half of the tank to its brim. Tap B drains water from the tank at a rate of 12 litres per minute. How long will it take for the tank to be filled to $\frac{1}{8}$ of its capacity if both taps are turned on at the same time?

Ans: _____ [5]

46 Azman had 25% more marbles than Chongfu. Chongfu had 60% more marbles than Bala. During a game, Azman and Bala lost some marbles to Chongfu in the ratio 3 : 1. In the end, Azman and Bala had 780 and 480 marbles left respectively. How many marbles did Azman have at first?

Ans: _____ [5]

47 At a school carnival, there were 520 more girls than boys. $\frac{1}{8}$ of the girls and 20% of the boys left the carnival. In the end, there were 488 more girls than boys.

(a) Did more girls or boys leave the carnival? How many more?

(b) How many children were there at the carnival in the end?

Ans: (a) _____ [1]

(b) _____ [4]

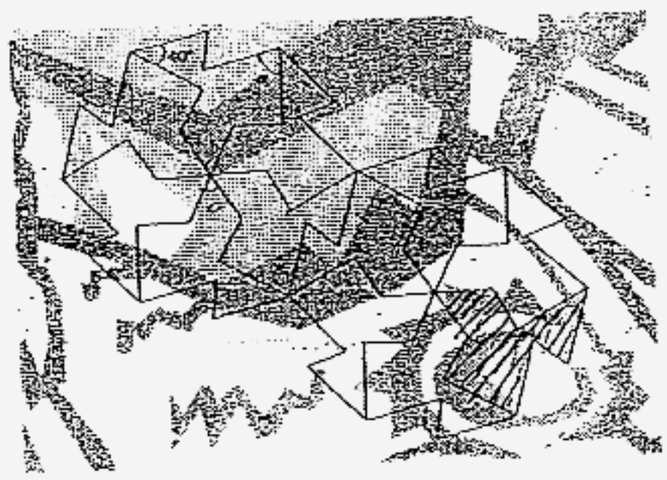
48 A bus and a car travelled from Town X to Town Y. The bus left Town X at 10.48 p.m. and it took 5 hours to reach Town Y. The car started 30 minutes later than the bus and it took 4 hours to reach Town Y. At what time did the car catch up with the bus?

Ans: _____ [5]

END OF PAPER

Setters: Miss Chan Lee Shan
Mrs Evan Cynthia Chan
Miss Sylvia Tay

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

16. **$300 000**
17. **9 mins**
18. $\frac{41}{100}$ **%**
19. **75kg**
20. $\frac{54y}{5}$
21. **4**
22. **72cm**
23. **10mins**
24. **128cm**
25. **245°**
26. $\frac{1}{3}$, **0.309, 0.065,** $\frac{2}{50}$
27. **3.4kg**
28. **5ℓ**
29. $\frac{1}{3}$
30. **24**
31. **72**
32. **28**
33. 
34. **80°**
35. **157.5°**

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36. 5

37. 3.75%

38. $100

39a. $2500
39b. 18%

40. 89kg

41. 18

42a. 70cm
42b. 76m

43. 143cm^2

44. $800

45. 6.3mins

46. 1320

47a. Girls = 32
47b. 1192

48. 1.18pm