ARMY PUBLIC SCHOOL, AHMEDNAGAR

CHAPTER 10: MENSURATION

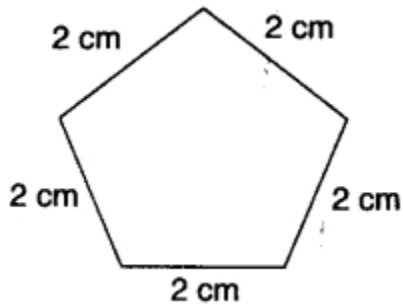## CLASS: VI

SUBJECT: MATHEMATICS

QUESTION BANK

Multiple Choice Questions (MCQs)

1) Perimeter of a square =
   (a) 4 × Length of a side
   (b) 2 × Length of a side
   (c) 3 × Length of a side
   (d) 6 × Length of a side.

2) Apala went to a park 20 m long and 10 m wide. She took one complete round of it. The distance covered by her is
   (a) 30 m
   (b) 60 m
   (c) 20 m
   (d) 10 m.

3) A page is 25 cm long and 20 cm wide. Find the perimeter of this page.
   (a) 90 cm
   (b) 45 cm
   (c) 500 cm
   (d) 5 cm.

4) Find the cost of fencing a rectangular park of length 10 m and breadth 5 m at the rate of? 10 per metre.
   (a) ₹ 300
   (b) ₹ 600
   (c) ₹ 150
   (d) ₹ 1200.

5) The perimeter of a square of side 1 m is
   (a) 1 cm
   (b) 2 cm

(c) 3 cm

(d) 4 m.

6) Find the distance travelled by Sangeeta if she takes 5 rounds of a square park of side 10 m.

(a) 200 m

(b) 100 m

(c) 400m

(d) 800 m.

7) The perimeter of a regular pentagon is 10 m. Find the length of the side.

(a) 1m

(b) 2m

(c) 5m

(d) 10m

8) The perimeter of the figure is

(a) 10 cm

(b) 20 cm

(c) 15 cm

(d) 50 cm.

9) The perimeter of a triangle of sides 2 cm, 3 cm and 4 cm is

(a) 9 cm

(b) 18 cm

(c) 27 cm

(d) 36 cm.

10) A rectangular piece of land measures 0.5 km by 0.25 km. Each side is to be fenced with 4 rounds of wire. What is the length of the wire needed?

(a) 2 km

(b) 3 km

(c) 4km

(d) 6 km.

Very Short Answer Type Questions

1. Find the perimeter of equilateral triangle whose each side is 7cm.
2. Find the length of a rectangle whose perimeter is 52 cm and breadth is 12 cm.
3. A rectangular carpet measures 3m 45cm by 2m 25 cm . What is perimeter of the carpet?
4. Leena bent a wire 132cm long into a square. What is the length of the side of a square?
5. Find the perimeter of a triangle whose sides are 5cm, 7cm and 10cm.
6. How much distance does a jooger cover if he runs 5 times around a rectangular Park 76m long and 35m wide?
7. A rope costing ₹ 8 per meter needs to be laid around a square field of side 150m. How much will the total rope cost?

Long Answer Type Questions

1) How much would it cost to lay a wall to wall carpet in a room 10m long and 7m wide, with a carpet that costs ₹ 115 per m^2
2) How many tiles of 10cm by 6cm will be needed to pave a rectangular path of 5m by 3m?
3) A farmer has a rectangular field of length and breadth 240 m and 180 m respectively. He wants to fence it with 3 rounds of rope. What is the total length of rope he must use?

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CHAPTER 11: ALGEBRA

QUESTION BANK

Multiple Choice Question

1. Which of the following is a variable quantity?

   a. Number of paise in 2 rupees.

   b. Number of diagonals in a rectangle.

   c. Length of the radius of a given circle.

   d. Number of sweets that can be bought for Rs.5.

2. Simplify the expression 5x + 2x

   a. 2x   b. 7x   c. 9x   d. 11x^2

3. A number 'n' is obtained by subtracting two from five times another number 'z'. Which of the following is equal to 'n'?

   a. 5- 2z   b. 2-5z   c. $\frac{5}{2} - z$ d. 5z − 2

4. If 12 chairs are divided equally among 'n' number of rows, then the number of chairs per row is _____.

   a. 12 + n   b. 12n   c. $\frac{12}{n}$ d. $\frac{n}{12}$

5. Bharti is 3 inches shorter than her mother. Write an expression that represents the height of Bharti's mother. If x is represents the height of Bharti in inches.

   a. x -3   b. 3x   c. $\frac{x}{3}$ d. x + 3

6. Sunny's age is 'x' years and his uncle Ram's age is 4 times Sunny's age.
If Sunny's father is 6 years younger than Ram, then what is the age of Sunny's father?

a. (4x + 6) years   b. (4x − 6) years   c. (6 − 4x) years   d. (6x − 4) years

7. Find the value of x in the equation $\frac{x}{2} + 6 = 8$

a. 6   b. 2   c. 4   d. 10

8. Which of the following are equations with a variable?

a. 2x − 12 = 3   b. 5x < 55   c. 14k= 98   d. 9 x 4 = 36

Short Answer

9. Raju's age (in years) is 2 more than 5 times her daughter's age.

10. If a notebook costs Rs p and a pencil costs Rs 3, then the total cost (in Rs) of two notebooks and one pencil.

11. Translate each of the following statements into an equation, using x as the variable:

  a. 13 subtracted from twice a number gives 3.

  b. 9 added to twice a number gives 13.

12. On my last birthday, I weighed 40kg. If I put on m kg of weight after a year, what is my present weight?

13. The score of Abhay in Maths is 25 more than the two third of his score in science. If he scored x marks in Science, find his score in Mathematics.

14. Rohit scores 80 marks in Maths and x marks in English. What is his total score in the two subjects?

Long Answer

15. Deepak's present age is one-third his mother's present age. If the mother's age was five times his age 6 years ago, what are their present ages?

16. Find the value of the expression $2x - 3y + 4z$, if $x = 10$, $y = -12$ and $z = 11$.

17. Form expressions using y, 2 and 7. Every expression must have y in it. use only two number operations. These should be different.

18. Find the value of $5x^2 - 3x + 2$, when $x = 2$

19. Show that the value of $x^3 - 8x^2 + 12x - 5$ is zero, when $x = 1$.

COMPETENCY BASED QUESTION

20. The wages ₹ W of a man earning ₹ x per hour for t hours are given by the formula $W = xt$. Find his wages for working 40 hours at a rate of ₹ 39.45 per hour.

21. The temperature in Fahrenheit scale is represented by F and the temperature in Celsius scale is represented by C. If $F = \frac{9}{5}x$ C + 32, find F when C = 40.

APPLICATION BASED QUESTION

22. A number is increased by 12 and 5 multiply the new number obtained. If the resulting number is 95, find the original number.

23. The age of a man is 27 years more than the age of his son. If the sum of their ages is 47 years, find the age of the son and his father.

24. When two consecutive natural numbers are added, the sum is 31; find the numbers.

25. The difference between two numbers is 15. Taking the smaller number as x; find :
(i) The expression for the larger number.
(ii) The larger number, if the sum of these numbers is 71.

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CHAP 12 RATIO AND PROPORTION
QUESTION BANK

MULTIPLE CHOICE QUESTIONS

1. The ratio of Rs 8 to 80 paise is
   (A) 1 : 10 (B) 10 : 1 (C) 1: 1 (D) 100 : 1

2. The length and breadth of a steel tape are 10m and 2.4cm, respectively. The ratio of the length to the breadth is

   (A) 5 : 1.2 (B) 25: 6 (C) 625: 6 (D) 1250: 3

3. Find the missing number in the box in the following proportion:

   X : 8 :: 12 : 32
   (A) 2   (B) 3   (C) 4   (D) 5

4. On a shelf, books with green cover and that with brown cover are in the   ratio 2:3. If there are   18 books with green cover, then the number of books with brown cover is (A) 12 (B) 24 (C) 27 (D) 36

5. The ratio of 8 books to 20 books is

   (A) 2 : 5 (B) 5 : 2 (C) 4 : 5 (D) 5 : 4

6. The ratio of the number of sides of a square to the number of edges of a cube is

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

7. A picture is 60cm wide and 1.8m long. The ratio of its width to its perimeter in lowest form is

   (A) 1 : 2   (B) 1 : 3   (C) 1 : 4   (D) 1 : 8

8. Neelam's annual income is Rs. 288000. Her annual savings amount to Rs. 36000. The ratio of her savings to her expenditure is

 (A) 1 : 8 (B) 1 : 7 (C) 1 : 6 (D) 1 : 5

9. Mathematics textbook for Class VI has 320 pages. The chapter 'symmetry' runs from page 261 to page 272. The ratio of the number of pages of this chapter to the total number of pages of the book is

 (A) 11 : 320 (B) 3 : 40 (C) 3 : 80 (D) 272 : 320

10. In a box, the ratio of red marbles to blue marbles is 7:4. Which of the following could be the total number of marbles in the box?

(A) 18 (B) 19 (C) 21 (D) 22

SHORT QUESTIONS

11. If two ratios are equal, then they are in _____.

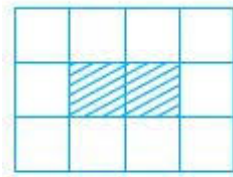12. The ratio of the perimeter of the boundary of the shaded portion to the perimeter of

Fig. 8.2

the whole figure is _____.

13. The ratio of the area of the shaded portion to that of the whole figure 8.2 is _____.

14. Sleeping time of a python in a 24-hour clock is represented by the shaded portion in Fig. 8.3.
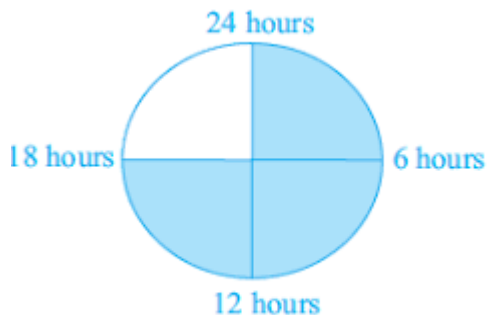

Fig. 8.3

15. A rectangular sheet of paper is of length 1.2m and width 21cm. Find the ratio of width of the paper to its length.

16. A scooter travels 120km in 3 hours and a train travels 120km in 2 hours. Find the ratio of their speeds.

(Hint : Speed = $\underline{\text{distance travelled}}$)

                         Time taken

17. A tea merchant blends two varieties of tea costing her Rs 234 and Rs 130 per kg in the ratio of their costs. If the weight of the mixture is 84kg, then find the weight of each variety of tea.

LONG QUESTIONS

18. In a year, Ravi earns Rs 360000 and paid Rs 24000 as income tax. Find the ratio of his
(a) income to income tax.
(b) Income tax to income after paying income tax.

19. The number of milk teeth in human beings is 20 and the number of permanent teeth is 32. Find the ratio of the number of milk teeth to the number of permanent teeth.

20. Of the 288 persons working in a company, 112 are men and the remaining are women. Find the ratio of the number of
(a) Men to that of women.
(b) Men to the total number of persons.
(c) Women to the total number of persons.

21. Samira sells newspapers at Janpath crossing daily. On a particular day, she had 312 newspapers out of which 216 are in English and remaining in Hindi. Find the ratio of
(a) the number of English newspapers to the number of Hindi newspapers.
(b) the number of Hindi newspapers to the total number of newspapers. 64.

22. Saturn and Jupiter take 9 hours 56 minutes and 10 hours 40 minutes, respectively for one spin on their axes. The ratio of the time taken by Saturn and Jupiter in lowest form is _____.

23. 10g of caustic soda dissolved in 100mL of water makes a solution of caustic soda. Amount of caustic soda needed for 1 litre of water to make the same type of solution is _____.

24. The marked price of a table is Rs 625 and its sale price is Rs 500. What is the ratio of the sale price to the marked price?

25. A line segment 56cm long is to be divided into two parts in the ratio of 2: 5. Find the length of each part.

26. When Chinmay visited chowpati at Mumbai on a holiday, he observed that the ratio of North Indian food stalls to South Indian food stalls is 5:4. If the total number of food stalls is 117, find the number of each type of food stalls.

27. At the parking stand of Ramleela ground, Kartik counted that there are 115 cycles, 75 scooters and 45 bikes. Find the ratio of the number of cycles to the total number of vehicles.

28. An alloy contains only zinc and copper and they are in the ratio of 7:9. If the weight of the alloy is 8kg, then find the weight of copper in the alloy.

29. In Fig. 8.6 (i) and Fig. 8.6 (ii), find the ratio of the area of the shaded portion to that of the whole figure:
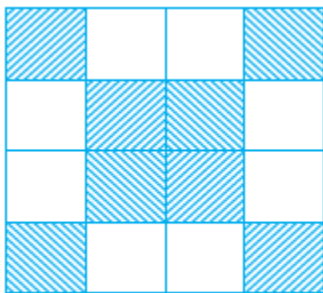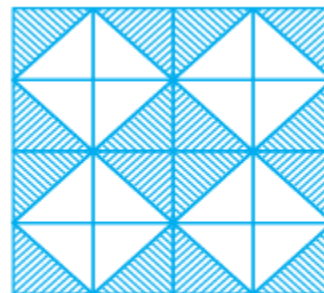

Fig. 8.6 (i)   Fig. 8.6 (ii)

30. A typist has to type a manuscript of 40 pages. She has typed 30 pages of the manuscript. What is the ratio of the number of pages typed to the number of pages left?

31. A car can travel 240km in 15 litres of petrol. How much distance will it travel in 25 litres of petrol?

COMPETENCY BASED QUESTIONS

32. Shivangi is suffering from anaemia, as haemoglobin level in her blood is lower than the normal range. Doctor advised her to take one iron tablet two times a day. If the cost of 10 tablets is Rs 17, then what amount will she be required to pay for her medical bill for 15 days?

33. A recipe for raspberry jelly calls for 5 cups of raspberry juice and $2\frac{1}{2}$ cups of sugar. Find the amount of sugar needed for 6 cups of the juice?

34. A carpenter had a board, which measured 3m × 2m. She cut out a rectangular piece of 250cm × 90cm. What is the ratio of the area of cut out piece and the remaining piece?

35. A farmer planted 1890 tomato plants in a field in rows each having 63 plants. A certain type of worm destroyed 18 plants in each row. How many plants did the worm destroy in the whole field?

36. A metal pipe 3 metre long was found to weigh 7.6kg. What would be the weight of the same kind of 7.8m long pipe?

APPLICATION BASED QUESTIONS

37. The quarterly school fee in Kendriya Vidyalaya for Class VI is Rs 540. What will be the fee for seven months?

38. In an election, the votes cast for two of the candidates were in the ratio 5: 7. If the successful candidate received 20734 votes, how many votes did his opponent receive?

39. The earth rotates 360o about its axis in about 24 hours. By how much degree will it rotate in 2 hours?

40. In a floral design made from tiles each of dimensions 40cm by 60cm (See Fig. 8.7), find the ratios of:

 (a) The perimeter of shaded portion to the perimeter of the whole design.

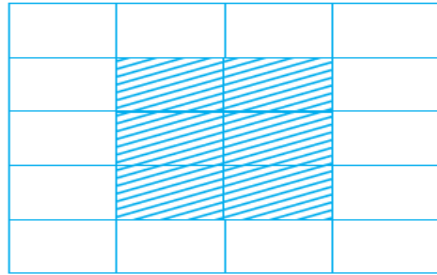 (b) The area of the shaded portion to the area of the unshaded portion.

Fig. 8.7

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QUESTION BANK

Chapter -14

Practical Geometry

Multiple Choice Question

1. l || m. P and Q are points on land m respectively such that PQ ⊥ lR is a point on a line n in the same plane such that $\overline{PQ}$ = $\overline{QR}$. Which of the following is true?
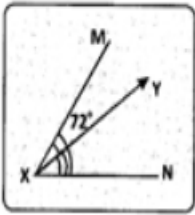
a. l || n   b. m || n   c. Both [a] and [b]   d. Neither [a] nor [b]

2. At 7 a.m. the angle between the Sun's ray and the ground at a point is 43°. What would be the angle at 10 a.m.?

 a.40°   b. 90°   c. Between 43° and 90°   d. Greater than 90°

3.

$\overrightarrow{XY}$ divides ∠MXN = 72° in the ratio 1 : 2. What is the measure of ∠YXN?

a. 48°   b. 24°   c. 72°   d. 96°

4. Identify the uses of a ruler.

  a. To draw a line segment of a given length

  b. To draw a copy of a given segment.

  c. To draw a diameter of a circle.

  d. All the above.

5. X and Y are two distinct points in a plane. How many lines can be drawn passing through both X and Y?

a. 0   b. 1   c. Only 2   d. Infinitely many

Short questions

6. Draw an angle of 80° and make a copy of it using ruler and compass.

7. Draw an angle of 152° and divide it into four equal parts.

8. Draw two line segments which are perpendicular to each other using set squares.

9. With PQ of length 6.1cm as diameter draw a circle.

10. Draw a circle with centre C and radius 3.4cm. Draw any chord AB. Construct the perpendicular bisector of AB and examine, if it passes through C.

Long questions

11.

Draw a line segment $\overline{PQ}$ = 2 cm. Construct another line segment $\overline{AB}$ such that $\overline{AB} = 3\overline{PQ}$.

Without measuring $\overline{AB}$, construct $\overline{EF}$ a copy of $\overline{AB}$.

12.

Construct a line segment AB of length 8 cm. From this cut a segment AC of length 4.2 cm and DB of length 1.3 cm. Measure the remaining segment $(\overline{CD})$.

13.

Draw two circles of equal radii with centres A and B such that each one of them passes through the centre of the other. Mark the points where they intersect each other as C and D. Examine whether $AB \perp CD$?

COMPETENCY BASED QUESTION

14.

Using your protractor, draw $\angle BAC$ of measure 80°. On AC, take a point P, such that AP=4 cm. From P, draw a line segment perpendicular to AB.

15.

Draw any angle with vertex O. Take a point A on one of its arms and B on another arm such that OA = OB. Draw perpendicular bisectors of OA and OB. Let them meet at P. Is PA = PB?

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