Question.1. In a regular polygon the ratio of the inner and outer angles in a vertex is 3:1, then[Marks :(3)]

(a) What is the sum of outer and inner angles at a vertex?

- (b) Find the measure of one outer angle.
- (c) Find the number of sides of the polygon
- **Ans.** a) 180
- b) 180/4 = 45
- c) 360/45 = 8

Question.2. n a box there are 24 beads, some red and some white. Number of white beads is 3 times that of the red beads. Then[Marks :(3)]

- a) What is the ratio of the number of white and red beads?
- b) How many white beads are there in the box?
- **Ans.** a) 3:1

b) 24 X 3/4 = 18

Question.3. Length and breadth of a reactangle are in the ratio 3:2. Its perimeter is 60 cm[Marks :(3)]

- a) Find sum of length and breadth
- b) Find length and breadth
- **Ans.** a) length + breadth = 30
- b) length = 30 X 3/5 = 18 cm
- Breadth = 12 cm

Question.4. The outer angles of a triangle are in the ratio 3:4:5[Marks :(8)]

- a) What is the sum of outer angles?
- b) Find measure of each outer angles?
- c) What is the ratio of measures of its inner angles?
- d) What type of triangle is it?
- **Ans.** a) 360°
- b) 90°, 120°, 150°

c) 90:60:30 = 3:2:1

d) Right angled triangle

Question.5. In box, there are some ripe and unripe mangoes. The ratio of number of ripe and unripe mangoes is 3:2. Unripe mangoes are 8 more than ripe in number.

a) Find number of ripe and unripe mangoes.[Marks :(5)]

b) If 4 more mangoes get ripe by the next day, what will be the new ratio of the number of ripe and unripe mangoes?

Ans. a) number of ripe mangoes = 2x

number of unripe mangoes = 3x

2x + 8 = 3x

x = 8

Number of ripe mangoes = 24

Number of unripe mangoes = 16

b) new numbers = 28, 12

ratio = 7:3

Question.6. Sides of two squares are in the ratio 4:7[Marks :(3)]

a) What is the ratio of their perimeters?

b) What is the ratio of their areas?

Ans. a) 4: 7

b) 16: 49 (1+1)

Question.7. In a class the ratio between the numbers of boys and girls is 5:6. On a particular day when only 2 boys were absent, the ratio is 3:4.

a) How can we write the number of girls if we write the number of boys as 5x?[Marks :(4)]

b) Find number of boys and girls.

Ans. a) 6x

b) 5x - 2: 6x = 3:4

x = 4

Number of boys = 20, girls = 24

Question.8. The length and breadth of a rectangle are in the ratio 4:3. If the length is reduced by 3 cm and breadth is increased by 3 cm, it becomes a square.

a) If the length is x, what is the breadth?[Marks :(4)]

b) Find the length and breadth.

Ans. a) $\frac{3x}{4}$ (1)

b)
$$x-3=\frac{3x}{4}+3$$
 (1)

x = 24(1)

length = 24, breadth = 18(1)

- Question.9. The angles of a triangle are in the ratio 1:3:5. Then[Marks :(4)]
- a) What is the sum of all angles?
- b) Find the measure of each angle?

Ans. a) 180°

b) 20°, 60°, 100° (1+1+1)

Question.10. Yellow paint has been mixed with red to get a mixture of 30 litres. If the volume of red paint is 18 litres, then[Marks :(2)]

- a) What is the volume of yellow paint?
- b) What is the ratio of red and yellow paint in the mixture?

Ans. a) 12 litres

b) 18: 12 = 3:2

Question.11. In the figure measures of ∠APB and ∠BPC are in the ratio 1:2.[Marks :(3)]

a) What is the sum of measures of $\angle APB$ and $\angle BPC$?

b) find \angle **APB** and \angle **BPC**.

Ans. a) $\angle APB + \angle BPC = 180^{\circ}$

b) ∠APB = 180/3 = 60°

∠BPC = 120°

Question.12. In a regular polygon the ratio of the inner and outer angles in a vertex is 3:1, then[Marks :(3)]

(a) What the sum of outer and inner angles at a vertex?

(b) Find the measure of one outer angle.

(c) Find the number of sides of the polygon

Ans. a) 180

b) 180/4 = 45

c) 360/45 = 8

Question.13. Blue and white paints are mixed in the ratio 5:2 to get a new colour.[Marks : (3)]

(a) if 10 litres of blue is taken, how many litres of white should be mixed in it?

(b) To get 35 litres of the new colour, how many litres of blue paint should be used?

Ans. a) Quantity of white paint = 4 litres

b) Quantity of blue paint = $35 \times 5/7 = 25$ litres (1+1)

Question.14. Thomas invested 36000 rupees and Rahim invested 20000 rupees in a business. After one month they got 28000 rupees profit. Then divided the profit in the ratio of their investments.[Marks :(4)]

a) What is the ratio of their investments?

b) What amount each of them will get as profit?

Ans. a) 36000 : 20000 = 9:5

b) 9x + 5x = 28000

x = 2000

Amount of Thomas = 18000 Rupees

Amount of Rahim = 10000 Rupees

Question.15. The perpendicular sides of a right angled triangle are in the ratio 3:4 and its area is 24 sq. cm

a) If one perpendicular side is x, what is the other perpendicular side?[Marks :(4)]

b) Calculate lengths of all the sides.

Ans. a) $\frac{3x}{4}$ or $\frac{4x}{3}$ b) $\frac{1}{2} \times \frac{3x}{4} \times x$ $3x^2 = 24 \times 8$ $x^2 = 64$ x = 8

sides 6, 8, 10 cms

Question.16. a)The perimeter of a triangle is 120 centimetre and its sides are in the ratio 5:12:13. Find the length of its sides. Is it a right triangle?[Marks :(5)]

b) Examine whether any triangle whose sides are in the ratio 5:12:13 is right?

Ans. a) Sides are 20,48,52,

 $20^2 + 48^2 = 52^2$

Therefore right triangle

b) $(5x)^2 + (12x)^2 = (13x)^2$

Therefore right triangle