Miscellaneous Examples

1. Fill in the blanks.

(*i*) The area of a triangular park whose sides are of length 120 m, 80 m and 50 m. ..... .

(*ii*) The area of triangle, two sides of which are 18 cm and 10 cm and the perimeter is 42 cm is .....

(iii) The area of an equilateral triangle of sides 13 cm .....

(iv) The perimeter of a right triangle is 24 cm . If its hypotenuse is 10 cm, its area .....

(v) If three sides of a triangle are 6 cm, 8 cm and 10 cm, then the altitude of the triangle using the largest side as base will be .....

(vi) If the side of a regular hexagon is 6 cm, then its area will be is equal to ..... .

(vii) The area of rhombus is equal to ..... .

(viii) The cost of levelling a triangular plot whose sides are 30 m, 72 m and 78 m respectively at the rate of 10 paise per sq m is .....

2. State true or false for each of the following statements.

(i) The base of an isosceles triangle is 24 cm and its area is 192 sq. cm. Its perimeter is 9.64 cm.

(ii) The area of a triangle with base 5 cm and whose height is equal to that of a rectangle with length 5 cm and area 20 cm^2 is 10 cm^2 .

(iii) If the altitude of an equilateral triangle is $\sqrt{6}$, then its area $2\sqrt{3}$.

(iv) If the area of an equilateral triangle is $24\sqrt{3}$ sq. m, then its perimeter is $12\sqrt{6}$ cm.

(v) The diagonals of rhombus are 64 cm and 48 cm. The height of the rhombus is 38.4 cm.

(vi) A parallelogram has sides 60 m and 40 m and one of its diagonals is 80m long. Then its area is $500\sqrt{15}$ m^2.

(vii) If one side of an equilateral triangle is 8 cm, then its area is $4\sqrt{3}$ cm^2.

(viii) If the sides of a triangle are in the ratio $\frac{1}{2} : \frac{1}{3} : \frac{1}{4}$ and perimeter of the triangle is 52 cm, then the length of the smaller side is 12 cm.

3. Match the Column I and II.

Column I	Column II
(i) The perimeter of a rhombus is 146 cm. One of its diagonal is 55 cm. The length of the other diagonal and area of rhombus are	(a) 2250 cm^2
(ii) The diagonals of rhombus are 64 cm and 48 cm long. The side of the rhombus is	(b) 120 cm^2
(iii) The perimeter of a triangular field is 270 cm and its sides are 25 : 17 : 12, then its area is	(c) 48 cm, 1320 cm^2

(iv) Two adjacent sides of a parallelogram are 15 cm and 10 cm. If the distance between the longer sides is 8 cm, then the area is

(v) Two adjacent sides of a parallelogram are 24 cm and 18 cm. If the distance between the longer sides is 12 cm then the distance between shorter sides

(vi) The perimeter of a rhombus is 40 m and its height 5 m. Its area is

(vii) The base of an isosceles triangle measures 24 cm and its area is 60 cm^2. What is the side of the triangle?

(a) 16 cm

(b) 40 cm

(c) 13 cm

(d) 50 m^2

4. Answer each of the following questions.

(i) Find the area of a triangle with perimeter 22 cm, one side 9 cm and difference of other two sides is 7 cm . [*CBSE* 2010]

(ii) The base of an isosceles triangle measures 24 cm and its area is 60 cm^2. Find its perimeter. [*CBSE* 2010]

(iii) The sides of a triangle are in the ratio 3 : 5 : 7 and its perimeter 600 m. Find the area of the triangle. [*CBSE* 2010]

(iv) The adjacent sides of a parallelogram ABCD measures 34 cm and 20 cm and the diagonal AC measures 42 cm. Find the area of the parallelogram. [*CBSE* 2010, 2011]

(v) The area of a trapezium is 420 m^2. The perpendicular distance between the two parallel sides is 21 m. If the difference of the parallel sides is 18 m, find the lengths of the parallel sides.

(vi) The area of a trapezium is 220 sq cm. The parallel sides are 20 cm and 35 cm respectively. Find the height of the trapezium.

(vii) The area of the trapezium is 475 cm^2 and height is 19 cm. Find its two parallel sides, if one side is 4 cm greater than the other.

(viii) The perimeter of a rhombus is 100 cm. One of its diagonal is 30 cm. Find the length of the other diagonal and the area of the rhombus.

Activity: If each side of a triangle is doubled. Verify that the ratio of areas of the new triangle thus formed and the given triangle is 4 : 1.

Answers

1. (i) $375\sqrt{15}$ m^2 (ii) $21\sqrt{11}$ cm^2 (iii) 73.177 cm^2 (iv) 24 cm^2

(v) 4.8 cm (vi) 93.53 cm^2 (vii) $\frac{1}{2}$ Product of its diagonals

(viii) ₹ 108

2. (i) False (ii) True (iii) True (iv) True
(v) True (vi) False (vii) False (viii) True

3. (i) → (c) (ii) → (e) (iii) → (a) (iv) → (b)
(v) → (d) (vi) → (g) (vii) → (f)

4. (i) $4\sqrt{11}$ cm^2 (ii) 50 cm (iii) $6000\sqrt{3}$ m^2 (iv) 672 cm^2
(v) 11 m and 29 m (vi) 8 cm
(vii) 23 cm and 27 cm (viii) 40 cm, 600 cm^2