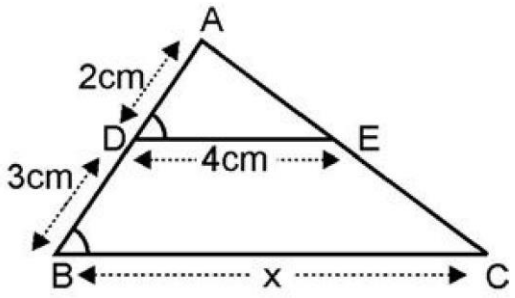
CHAPTER-6

TRIANGLES

QUESTION BANK

1. In the given figure, if DE || BC, then x equals

(a) 6 cm (b) 10 cm (c) 8 cm (d) 12.5 cm



2. All _____ triangles are similar.

(a) isosceles (b) equilateral (c) scalene (d) right angled

3. All circles are _____

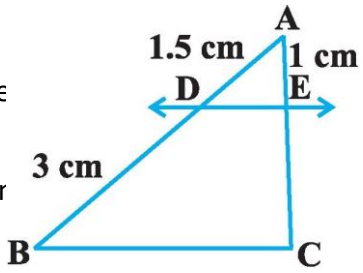
(a) congruent (b) similar (c) not similar (d) none of these

4. All squares are _____

(a) congruent (b) similar (c) not similar (d) none of the

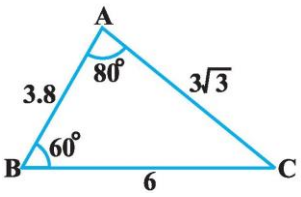
5. In the given fig DE || BC then the value of EC is

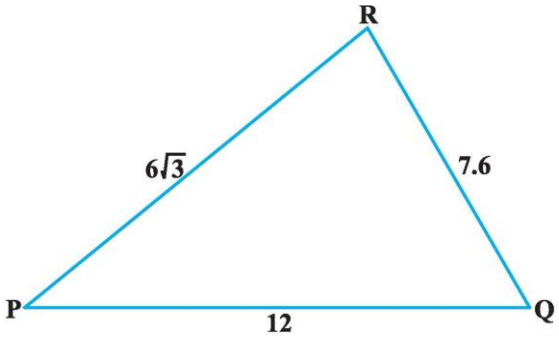
(a) 1 cm (b) 2 cm (c) 3 cm (d) 4 cm



6. In the given below figure, the value of $\angle P$ is

(a) 60^0 (b) 80^0 (c) 40^0 (d) 100^0





7. A girl of height 90 cm is walking away from the base of a lamp-post at a speed of 1.2 m/s. If the lamp is 3.6 m above the ground, then the length of her shadow after 4 seconds.

(a) 1.2 m (b) 1.6 m (c) 2 m (d) none of these

8. A vertical pole of length 6 m casts a shadow 4 m long on the ground and at the same time atower casts a shadow 28 m long. Find the height of the tower.

(a) 42 m (b) 48 m (c) 54 m (d) none of these

9. $\triangle ABC \sim \triangle DEF$ and their areas be, respectively, 64 cm^2 and 121 cm^2. If EF = 15.4 cm, the valueof BC is.

(a) 11.2 cm (b) 15.4 cm (c) 6.4 cm (d) none of these

10. ABC and BDE are two equilateral triangles such that D is the midpoint of BC. Ratio of the areasof triangles ABC and BDE is

(a) 2 : 1 (b) 1 : 2 (c) 4 : 1 (d) 1

11.A vertical pole of length 6 m casts a shadow 4 m long on the ground and at the same time a tower casts a shadow 28 m long. Find the height of the tower.

12.Prove that "The ratio of the areas of two similar triangles is equal to the square of the ratio of their corresponding sides."

13.If the areas of two similar triangles are equal, prove that they are congruent.

14.D, E and F are respectively the mid-points of sides AB, BC and CA of □ABC. Find the ratio of the areas of □DEF and □ABC.

15.Prove that the ratio of the areas of two similar triangles is equal to the square of the ratio of their corresponding medians.

16.Prove that the area of an equilateral triangle described on one side of a square is equal to half the area of the equilateral triangle described on one of its diagonals.

17.Prove that "If a perpendicular is drawn from the vertex of the right angle of a right triangle to the hypotenuse then triangles on both sides of the perpendicular are similar to the whole triangle and to each other."

18.Prove that "In a right triangle, the square of the hypotenuse is equal to the sum of the squares of the other two sides.

19. If A ABC ~ ARPQ, AB = 3 cm, BC = 5 cm, AC = 6 cm, RP = 6 cm and PQ = 10 cm, then find QR

20. R and S are points on the sides DE and EF respectively of a ADEF such that ER = 5 cm, RD = 2.5 cm, SE = 1.5 cm and FS = 3.5 cm. Find whether RS || DF or not.

21. From airport two aeroplanes start at the same time. If the speed of first aeroplane due North is 500 km/h and that of other due East is 650 km/h, then find the distance between two aeroplanes after 2 hours.

22. AABC, is right angled at C. If p is the length of the perpendicular from C to AB and a, b, c are the lengths of the sides opposite ∠A,∠B, ∠C respectively then prove that $\frac{1}{p^2} = \frac{1}{a^2} + \frac{1}{b^2}$.

23. In ADEW, AB || EW. If AD = 4 cm, DE = 12 cm and DW = 24 cm, then find the value of DB.

24. A ladder is placed against a wall such that its foot is at distance of 5 m from the wall and its top reaches a window 5/3 m above the ground. Find the length of the ladder

25. Let ΔABC ~ ΔDEF, ar (ΔABC) = 169 cm2 and ar (ΔDEF) = 121 cm^2. If AB = 26 cm^2 then find DE.

26. Determine whether the triangle having sides (a – 1) cm, 2 √a cm and (a + 1) cm is a right angled triangle.

27. Equiangular triangles are drawn on sides of right angled triangle in which perpendicular is double of its base. Show that area of triangle on the hypotenuse is the sum of areas of the other two triangles?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