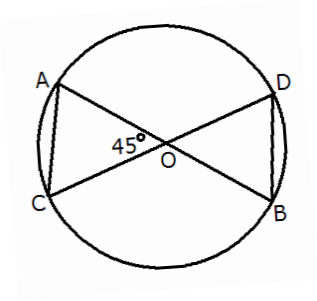
Chapter 6 – Triangles

MM 25 **Class X** **Time 1h**

1 Mark Each

1. Two _____ are always similar.
(a) circles (b) quadrilaterals (c) triangles (d) pentagons

2. If in Figure O is the point of intersection of two chords AB and CD such that OB = OD, then ΔABC and ΔODB are
(A) equilateral but not similar (B) isosceles but not similar
(C) equilateral and similar (D) isosceles and similar



3. In equilateral Δ ABC, D and E are the mid points of sides AB and AC respectively. Prove DE || BC

4. ABCD is a trapezium in which AB || DC and the diagonals intersect at O. OA = (3x – 19)cm, OC = (x – 5)cm, OB = (x – 3)cm and OD = 3cm. Find x

5. Prove sum that sum of squares of sides of a rhombus is equal to the sum of squares of its diagonals.

2 Marks Each

6. ΔABC and ΔDBC are on opposite sides of BC. AD intersects BC at O.
Prove that $\frac{ar(\Delta DEF)}{ar(\Delta CFB)}$

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3 Marks Each

7. In figure AB, CD and EF are each $\perp$ to BE. Prove that $\frac{1}{z} = \frac{1}{x} + \frac{1}{y}$

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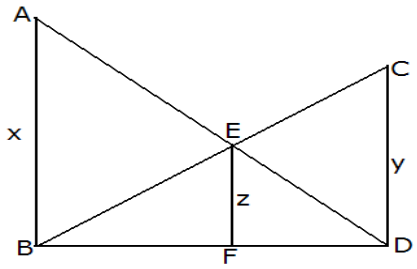
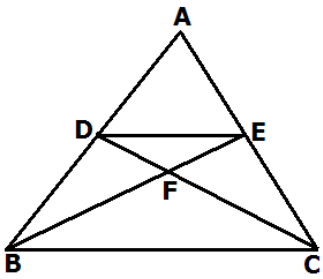


8. In figure DE || BC and AD: DB = 4:5. Find $\frac{ar(\Delta DEF)}{ar(\Delta CFB)}$



6 Marks Each

9. Prove that the ratio of the areas of two similar triangles is equal to the ratio of the square of their corresponding sides
Using the above, do the following:
The areas of two similar triangles PQR and ABC are in the ratio of 9:16.
If BC = 4cm, find the length of QR.

10. State and prove Pythagoras theorem using it proves the following:
In ΔABC, angle A = 90° and $AD \perp BC$. Prove that $AB^2 + CD^2 = BD^2 + AC^2$.