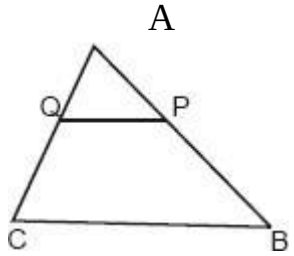
BHARATIYA VIDYA BHAVAN'S V M PUBLIC SCHOOL, VADODARA
QUESTION BANK

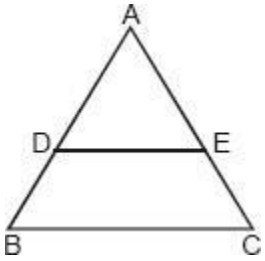
Class : X Practice Paper

Subject : Mathematics Chapter : Triangles

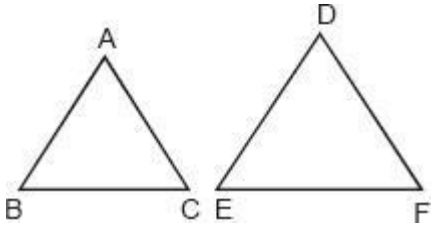
1. In the fig., P and Q are points on the sides AB and AC respectively of □ABC such that AP = 3.5 cm, PB = 7 cm, AQ = 3 cm and QC = 6 cm. If PQ = 4.5 cm, find BC.




2. The lengths of the diagonals of a rhombus are 30 cm and 40 cm. Find the side of the rhombus.
3. In the fig., PQ ∥ BC and AP: PB = 1 : 2. Find $\frac{ar(\Delta APQ)}{ar(\Delta ABC)}$.
4. The perimeter of two similar triangles ABC and LMN are 60 cm and 48 cm respectively. If LM = 8 cm, then what is the length of AB?
5. In ΔABC shown in figure, DE ∥ BC. If BC = 8 cm, DE = 6 cm and area of ΔADE = 45 $cm^2$, what is the area of ΔABC?

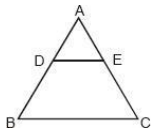



6. If the areas of two similar triangles are in ratio 25 : 64, write the ratio of their corresponding sides.
7. If one diagonal of a trapezium divides the other diagonal in the ratio 1:3. Prove that one of the parallel sides is three times the other. **8.** In the given figure, ΔABC and ΔDEF are similar, BC = 3 cm, EF = 4 cm and area of ΔABC = 54 $cm^2$. Determine the area of ΔDEF.



**9.** In a triangle PQR and MST, $\angle P=55°$, $\angle Q = 25°$, $\angle M = 100°$ and $\angle S = 25°$. Is $\Delta QPR$ similar to $\Delta TSM$? Why?

**10.** In the given figure, ABC is a triangle in which AB = AC, D and E are points on the sides AB and AC respectively, such that AD = AE. Show that the points B, C, E and D are concyclic.




**11.** ABCD is a trapezium with AB ∥ DC in which diagonals AC and BD intersect at E and AAED ˜ ABEC. Prove that AD = BC.

**12.** ABC is a triangle. PQ is a line segment intersecting AB in P and AC in Q such that PQ ∥ BC and divides $\Delta ABC$ into two parts equal in area. Find BP/AB,

**13.** ABC is a triangle in which AB = AC and D is any point in BC. Prove that : $AB)^2 – (AD)^2 = BD . CD$.

**14.** AD is the median of $\Delta ABC$, O is any point on AD. BO and CO produced meet AC and AB in E and F respectively. AD is produced to X such that OD = DX. Prove that AO : AX = AF:AB.

**15.** In a triangle ABC, P divides the sides AB such that AP : PB = 1 : 2, Q is a point on AC such that PQ ∥ BC. Find the ratio of the areas of $\Delta APQ$ and trapezium BPQC.

**16.** In $\Delta LMN$, $\angle L = 50°$and $\angle N= 60°$. If $\Delta LMN$ is similar to $\Delta PQR$, then find $\angle Q$

**17.** If areas of two similar triangles are in the ratio 25:64, write the ratio of their corresponding sides.

**18.** D, E and F are mid points of sides BC, AC and AB respectively of triangle ABC. Find ar($\Delta DEF$)/ar($\Delta ABC$).

**19.** If one diagonal of a trapezium divides the other diagonal in the ratio 1:2. Prove that one of the parallel sides is double the other.

**20.** ABC is a right triangle, right angled at A, and D is the mid-point of AB. Prove that $BC^2 = CD^2 + 3BD^2$.

**21.** If the diagonals of a quadrilateral divide each other proportionally, prove that it is a trapezium.

**22.** Triangle ABC is right angled at B and D is the mid-point of BC. Prove that:- $AC^2 = 4AD^2 . 3AB^2$.

**23.** E is a point on the side AD produced of a parallelogram ABCD and BE intersects CD at F. Show that $\Delta ABC$ is similar to $\Delta CFB$.

**24.** Two sides and the perimeter of one triangle are respectively three times the corresponding sides and the perimeter of the other triangle. Are the two triangles similar?

**25.** $\Delta ABC \sim \Delta PQR$ with $BC/QR = 1/3$, then find $ar(\Delta PQR)/ar(\Delta ABC)$.

**26.** Is the triangle with sides 14cm, 12cm and 17cm a right triangle? Why?

**27.** The lengths of diagonals of a rhombus are 24 cm and 32 cm. Find the length of its sides.

**28.** PQR is an isosceles triangle with QP=QR. If $PR^2 = 2QR^2$, prove that $\Delta PQR$ is right angled.

**29.** In a triangle ABC, line DE is drawn parallel to side BC such that AD/DB = AE/EC. Show that BAC is an isosceles triangle.

**30.** A 20 m long vertical pole casts a shadow 10 m long on the ground. At the same time a tower casts a shadow 50 m long on the ground. Find the height of the tower.

**31.** State and prove basic proportionality theorem.

**32.** L and M are two points on the sides DE and DF of the triangle DEF such that DL=4, LE=4/3, DM=6 and DF=8. Is LM parallel to EF? Why?

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