



# VIDYA BHAWAN, BALIKA VIDYAPITH

Shakti Utthan Ashram, Lakhisarai-811311(Bihar)

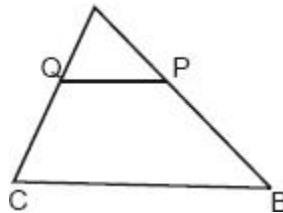
(Affiliated to CBSE up to +2 Level)

CLASS: X

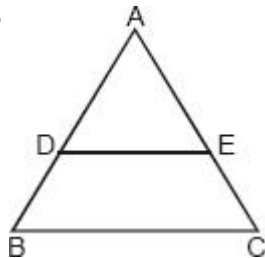
SUB.: MATHS (NCERT BASED)

DATE: 15-10-2020

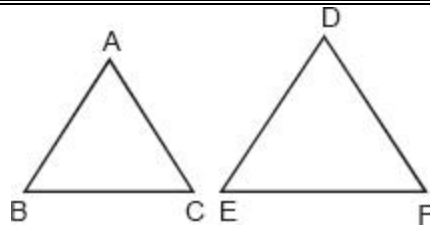
1. In the fig., P and Q are points on the sides AB and AC respectively of triangle ABC such that AP = 3.5 cm, PB = 7 cm, AQ = 3 cm and QC = 6 cm. If PQ = 4.5 cm, find BC.



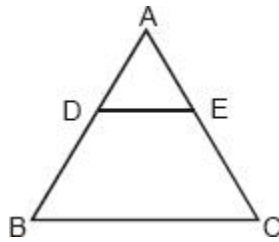
2. The lengths of the diagonals of a rhombus are 30 cm and 40 cm. Find the side of the rhombus.
3. In the fig.,  $PQ \parallel BC$  and  $AP:PB = 1:2$ . Find  $\frac{\text{ar}(\Delta APQ)}{\text{ar}(\Delta ABC)}$ .
4. The perimeter of two similar triangles ABC and LMN are 60 cm and 48 cm respectively.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



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,  $\Delta ABC$  and  $\Delta DEF$  are similar,  $BC = 3$  cm,  $EF = 4$  cm and area of  $\Delta ABC = 54 \text{ cm}^2$ . Determine the area of  $\Delta DEF$ .



**9.** 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.



**10.** ABCD is a trapezium with  $AB \parallel DC$  in which diagonals AC and BD intersect at E and  $\triangle AED \sim \triangle BEC$ . Prove that  $AD = BC$ .

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

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

**13.** AD is the median of  $\triangle ABC$ , 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  $AO : AX = AF : AB$ .

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