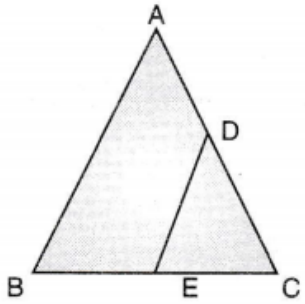
PRACTICE QUESTIONS (TRIANGLES)
CLASS: X : MATHEMATICS

1. In ΔABC, DE||BC and $\frac{AD}{DB}=\frac{3}{1}$ if EA = 6.6cm, then find AC

2. In the figure of Δ ABC, DE || AB. If AD = 2x, DC = x + 3 , BE = 2x − 1 and CE = x, then find the value of 'x'



3. If ΔABC and ΔDEF are similar triangles such that $\angle A=47^0$ and $\angle E=83^0$, then find $\angle C$

4. ABCD is a trapezium with AD ∥ BC and AD = 4cm. If the diagonals AC and BD intersect each other at O such that AO/OC = DO/OB =1/2, then find BC.

5. In ΔABC and ΔPQR, we have AB= 4.5 cm BC = 5 cm, CA= 6√2 cm, PQ = 10 cm, QR=9 cm, PR =12√2 cm. If $\angle A$ =75° and $\angle B$= 55°, then find $\angle P$.

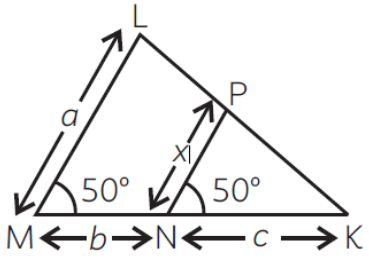
6. ΔABC is such that AB = 3 cm, BC = 2 cm, CA = 2.5 cm. If ΔABC-ΔDEF and EF=4cm, then find the perimeter of ΔDEF.

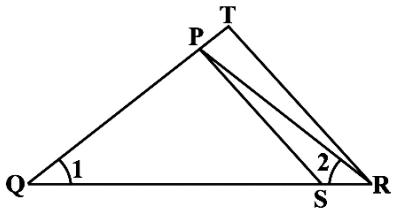
7. In ΔABC, DE || AB, If CD = 3 cm, EC = 4 cm, BE = 6 cm, then find DA.

8. A girl walks 200m towards East and then 150m towards North. Find the distance of the girl from the starting point.

9. In the ΔABC, DE || BC. If AE = 2 cm, AD = 3 cm and BD = 4.5 cm, then find CE.

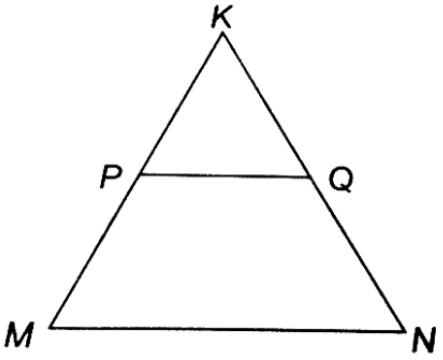
10. In the given below left figure, find the value of x in terms of a, b and c.

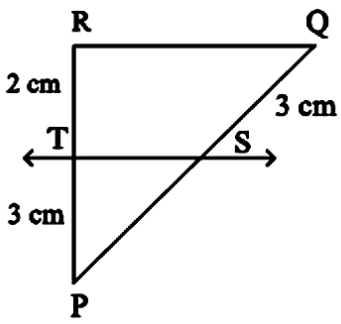




11. In the above right sided figure, $\frac{QR}{QS}=\frac{QT}{PR}$ and $\angle 1=\angle 2$, Show that ΔPQS ~ ΔTQR.

12. In the below left figure, PQ is parallel to MN. If $\frac{KP}{PM}=\frac{4}{13}$ and KN = 20.4 cm. Find KQ.

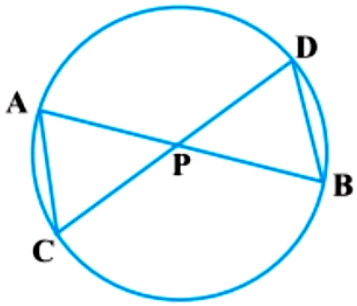


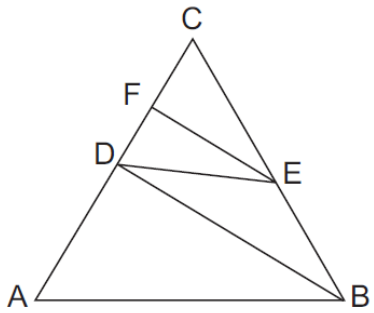


13. In the above right sided figure, if ST || QR. Find PS.

14. ΔABC~ΔPQR. If AM and PN are altitudes of ΔABC and ΔPQR respectively and AB^2: PQ^2 = 4: 9, then find the ratio AM: PN.

15. In the below left figure, two chords AB and CD intersect each other at the point P.





Prove that (i) ΔAPC ~ ΔDPB (ii) AP. PB = CP. DP

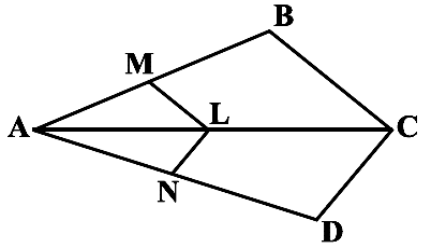
16. If in the given above right sided figure, AB || DE and BD || EF, then prove that DC^2 = CF x AC

17. 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, find the length of her shadow after 4 seconds.

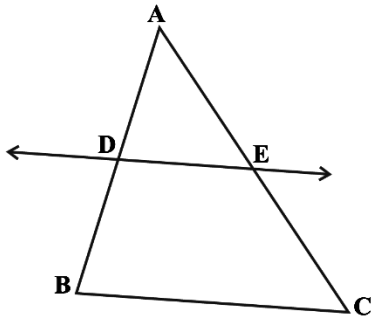
18. A vertical pole of length 6 m casts a shadow 4 m long on the ground and at the same time a tower casts a shadow 28 m long. Find the height of the tower.

19. ABCD is a trapezium in which AB || CD and its diagonals intersect each other at the point O. Using a similarity criterion of two triangles, show that $\frac{OA}{OC} = \frac{OB}{OD}$

20. Prove that $\frac{AB}{MB} = \frac{AN}{ND}$ if LM II CB and LNII CD as shown in the figure.



21. If a line intersects sides AB and AC of a Δ ABC at D and E respectively and is parallel to BC, prove that AD/AB = AE /AC



22. Prove that if a line is drawn parallel to one side of a triangle intersecting the other two sides in distinct points, then the other two sides are divided in the same ratio. Using the above theorem prove that a line through the point of intersection of the diagonals and parallel to the base of the trapezium divides the non parallel sides in the same ratio.