

# LATEX ASSIGNMENT

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## CLASS 10

### Circles

1. In Fig. 1,  $PQ \parallel BC$ ,  $PQ = 3\text{ cm}$ ,  $BC = 9\text{ cm}$  and  $AC = 7.5\text{ cm}$ . Find the length of  $AQ$ .

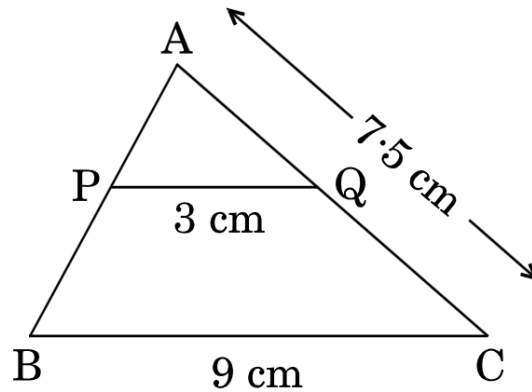


Figure 1:  $PQ \parallel BC$

2. Draw a circle of radius  $2.5\text{ cm}$ . Take a point  $P$  outside the circle at a distance of  $7\text{ cm}$  from the centre. Then construct a pair of tangents to the circle from point  $P$ .
3. Sides  $AB$  and  $AC$  and median  $AD$  of  $\triangle ABC$  are respectively proportional to sides  $PQ$  and  $PR$  and median  $PM$  of  $\triangle PQR$ . Show that  $\triangle ABC \sim \triangle PQR$ .
4. In Fig. 2  $BN$  and  $CM$  are medians of a  $\triangle ABC$  right-angled at  $A$ . Prove that  $4(BN^2 + CM^2) = 5BC^2$ .

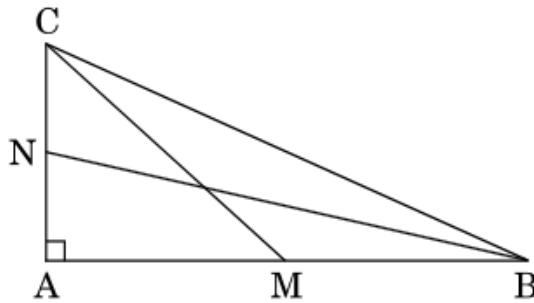


Figure 2:  $BN$  and  $CM$  are medians

5. Construct a pair of tangents to a circle of radius  $4\text{cm}$  from a point  $P$  lying outside the circle at a distance of  $6\text{cm}$  from the centre.
6. (a) Draw a line segment  $AB$  of length  $8\text{cm}$  and locate a point  $P$  on  $AB$  such that  $AP : PB = 1 : 5$ .  
 (b) Draw a circle of radius  $3\text{cm}$ . From a point  $P$  lying outside the circle at a distance of  $6\text{cm}$  from its centre, construct two tangents  $PA$  and  $PB$  to the circle.
7. Construct a pair of tangents to a circle of radius  $5\text{cm}$  which are inclined each other at an angle of  $60^\circ$ .
8. Write the steps of construction for constructing a pair of tangents to a circle of radius  $4\text{cm}$  from a point  $P$ , at a distance of  $7\text{cm}$  from its centre  $O$ .