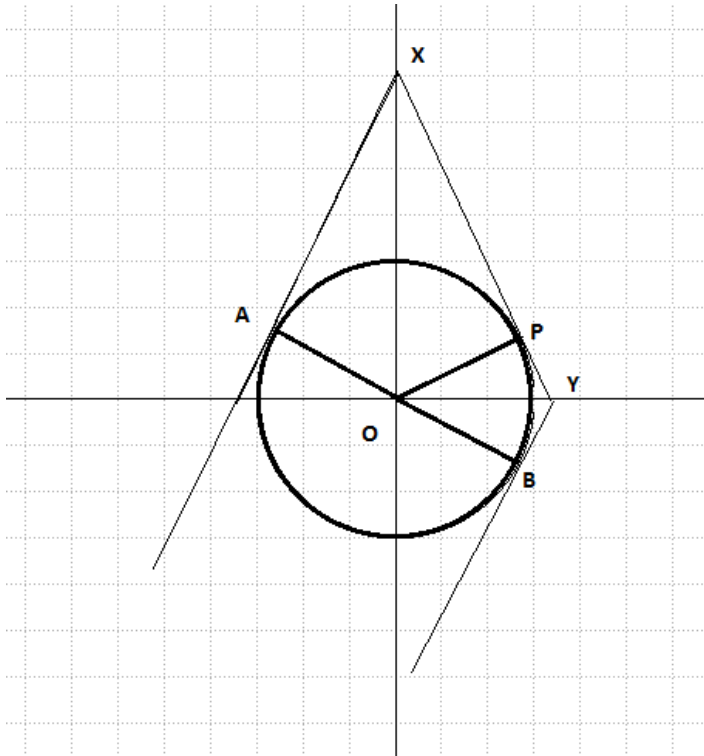


Answer on Question #46548 – Math - Geometry

Two tangents at A and B cut a third tangent at X and Y. If O is the centre of the circle and angle XOY is equal to 90° , show that the tangents at A and B are parallel.

Solution.



$$\triangle AXO = \triangle PXO, \quad \triangle BYO = \triangle PYO$$

$$\text{So, } \angle AOX = \angle POX, \quad \angle BOY = \angle POY,$$

$$\begin{aligned} \angle AOB &= \angle AOX + \angle POX + \angle BOY + \angle POY = 2(\angle XOP + \angle YOP) = \\ &= 2 \angle XOY = 2 * 90^\circ = 180^\circ. \end{aligned}$$

Thus $\angle AOB = 180^\circ$ and the tangents at A and B are parallel.