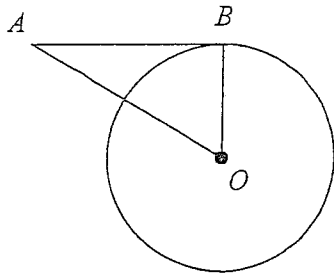
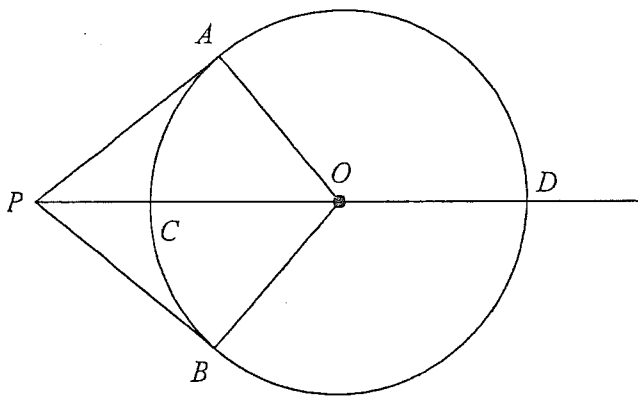


Level 4:

10. Determine whether a tangent line is shown in the diagram, for $AB = 7$, $OB = 3.75$, and $AO = 8$. Explain your reasoning. (The figure is not drawn to scale.)



11. In circle O , \overline{PA} and \overline{PB} are tangents. (The figure is not drawn to scale.)



- Prove that $\triangle APO \cong \triangle BPO$.
 - Find $m\angle BOD$ for $m\angle AOP = 64$. Explain your reasoning.
12. In $\triangle NML$, $NL = NM$, and the perimeter is 46 cm. A , B , and C are points of tangency to the circle. $MC = 4$ cm. Find NL . Explain your reasoning. (The figure is not drawn to scale.)

