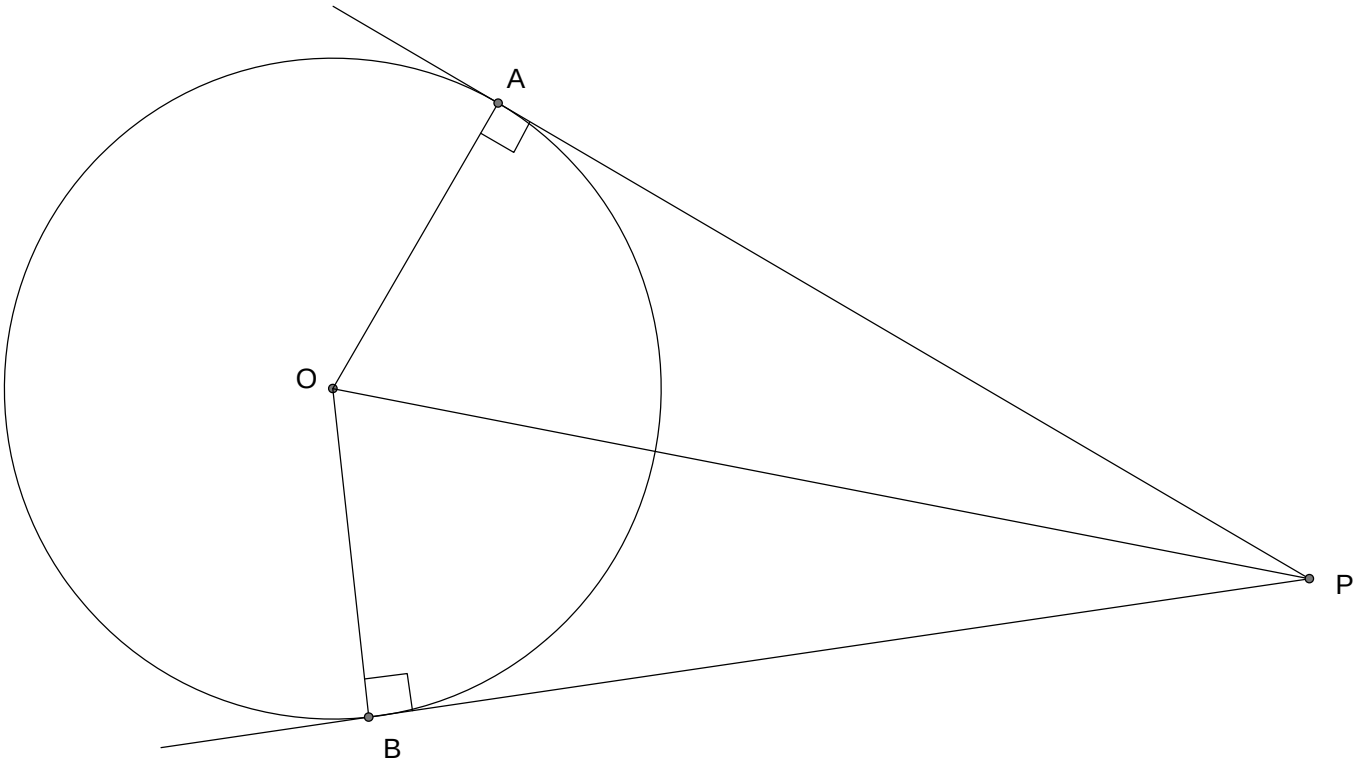
Year 10 Mathematics Extension Investigation

Circle Geometry Properties!!! Take Home Part Solution 6 of 7

TASK SIX: Lengths of Tangents Theorem



Given: Point P, a point outside the circle, with centre O, PA and PB are two tangents drawn from P to touch the circle at A and B respectively.

To Prove: *PA* = PB

Extension to the diagram: Radii OA and OB. Line OP.

Proof:	$\angle OAP = \angle OBP = 90°$	Tangent is $\perp$ to radius.
	A0 = BO	Radii of circle O
	OP = PO	Common sides of ΔAOP and ΔBOP
$\therefore$	$\Delta AOP \cong \Delta BOP$	RHS
$\therefore$	*PA* = PB	
		Q.E.D.