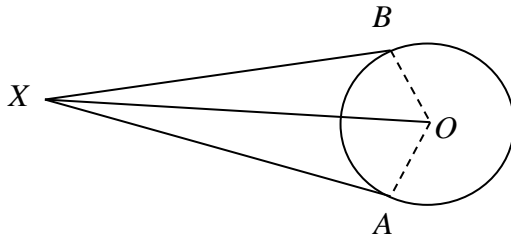


## Tangent Lines Assignment

Solve problems involving tangent of a circle.

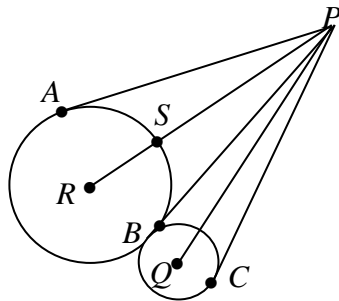
A.  $\overline{XA}$  and  $\overline{XB}$  are tangents from the external point X.



1.  $OA = 7$  and  $XO = 25$ , find  $AX$ .
2. If  $XA = 24$  and  $XO = 26$ , find the radius of the circle.
3.  $m\angle AXO = 32$ , find  $m\angle AXB$ .
4.  $m\angle AOX = 48$ , find  $m\angle AXB$ .
5.  $m\angle AXB = 38$ , find  $m\angle AOB$ .

# Tangent Lines Assignment

$\overline{PA}, \overline{PB}$  and  $\overline{PC}$  are tangents to  $\odot Q$  and  $\odot R$  from an external point P.

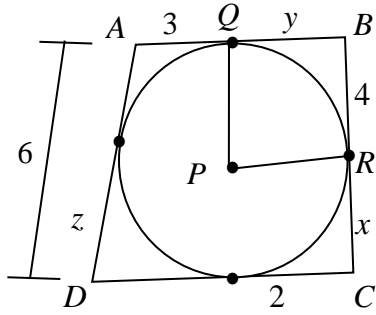


6. If  $PA = 10$ , find  $PC$ .

7. If  $PA = 15$  and  $AR = 8$ , find  $PS$ .

8. If  $m\angle RPQ = 35$ , find  $m\angle APC$ .

# Tangent Lines Assignment



9. Find  $x$ .

10. Find  $y$ .

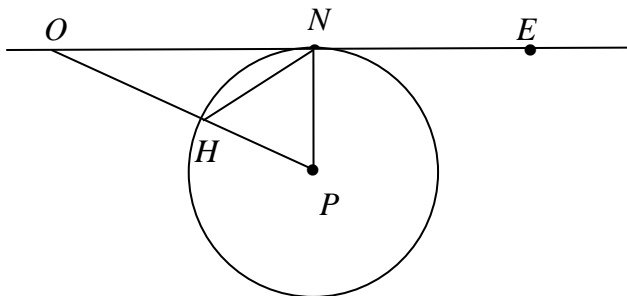
11. Find  $z$ .

12. Find  $CD$ .

13. Find the perimeter of  $ABCD$ .

14. Given:  $m\angle QPR = 90$ , Prove:  $PQBR$  is a square.

# Tangent Lines Assignment



Given:  $EO$  is tangent to  $\odot P$  at  $N$ .

$$PN = NH = 16$$

15. Find  $PH$ .

16. Find  $m\angle P$ .

17. Find  $m\angle PNH$ .

18. Find  $m\angle PHN$ .

19. Find  $NO$ .

20. Find  $PO$ .