Tangent Lines - Step-by-Step Lesson
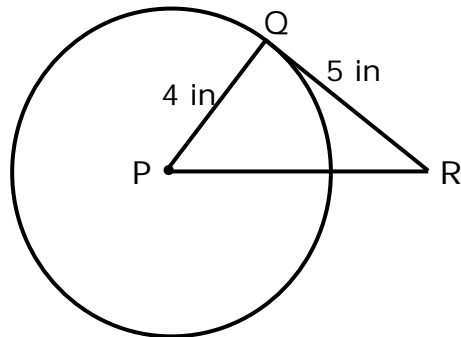
Lesson 1 Tangent Line:

$\overleftrightarrow{QR}$ is tangent to ⊙ with center P. What is PR?

Explanation:

Step 1) First we have to see what is being asked.

"What is PR?" This looks like an extended radius problem.

Step 2) Since $\overleftrightarrow{QR}$ is tangent to ⊙ with center P, $\overleftrightarrow{QR}$ is perpendicular to $\overleftrightarrow{PQ}$. So △PQR is a right triangle with hypotenuse $\overline{PR}$.

Now use the Pythogorean Theorem to find PR.

$PQ^2 + QR^2 = PR^2$

$4^2 + 5^2 = PR^2$ Plug in PQ = 4 and QR = 5

$16 + 25 = PR^2$ Square

$41 = PR^2$ Add

$6.4 = PR$ Take the square root of both sides

Step 3) So the answer is PR = 6.4 inch.