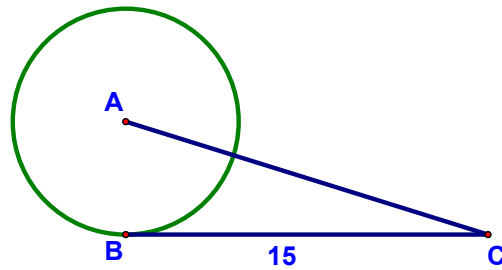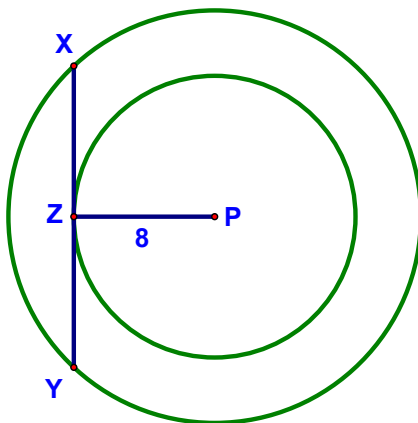1.

The radius of ⊙A is 8 cm. Tangent segment $\overline{BC}$ is 15 cm long.
Find the length of $\overline{AC}$.

2.

Concentric circles with radii 8 & 10 have center P. $\overline{XY}$ is a tangent to the inner circle and is a chord of the outer circle. Find XY.
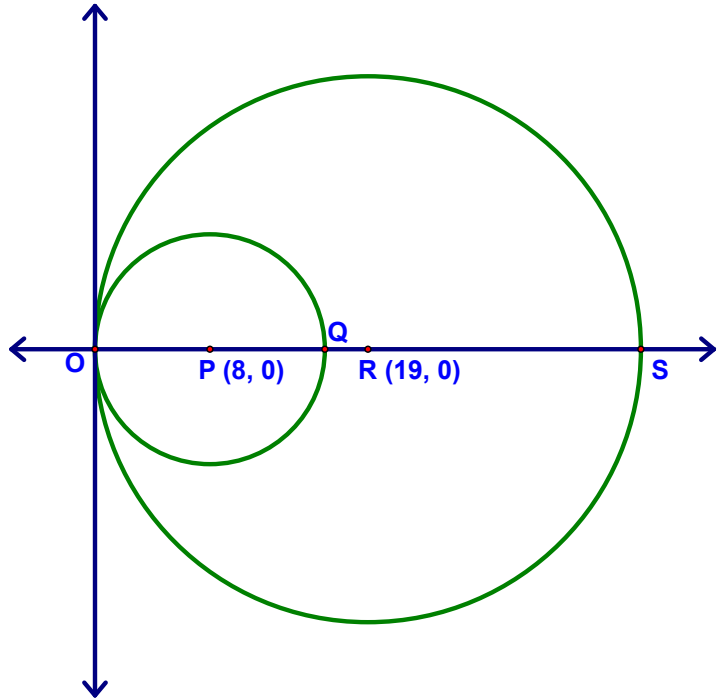
5.

ⵙP and ⵙR are interrnally tangent at O. P is at (8, 0) and R is at (19, 0).

　　a. Find the coordinates of Q and S

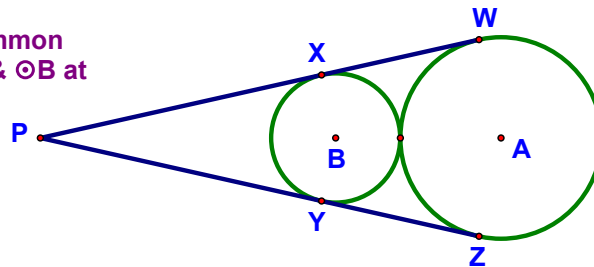　　b. Find the length of $\overline{QR}$

O　　　　P (8, 0)　　　Q　R (19, 0)　　　　　　S

9.

Given: $\overline{PW}$ & $\overline{PZ}$ are common
　　　　tangents to ⵙA & ⵙB at
　　　　W, X, Y, & Z

Prove: $\overline{WX} \cong \overline{YZ}$
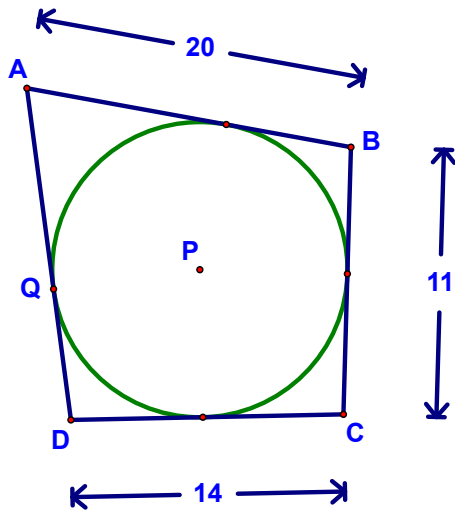
W
X
P
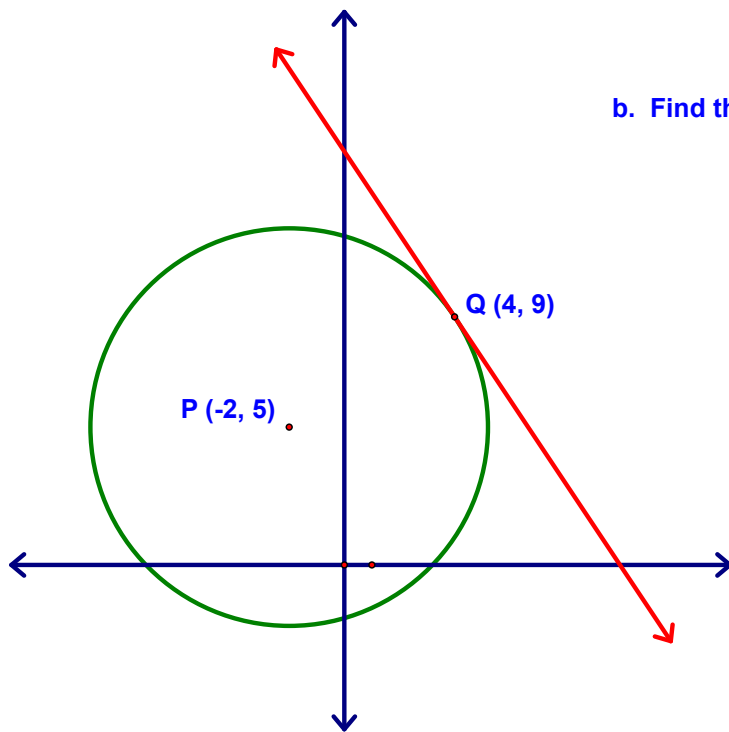B
A
Y
Z

Statements	Reasons

10.

⊙P is tangent to each side of ABCD. AB = 20, BC = 11, and DC = 14.
Let AQ = x and find AD.

11.

a. **Find the radius of ⊙P**

b. **Find the slope of the tangent to ⊙P at point Q**

Q (4, 9)

P (-2, 5)

13.

The centers of two circles of radii 10 cm and 5 cm are 13 cm apart.

    a. Find the length of a common external tangent.
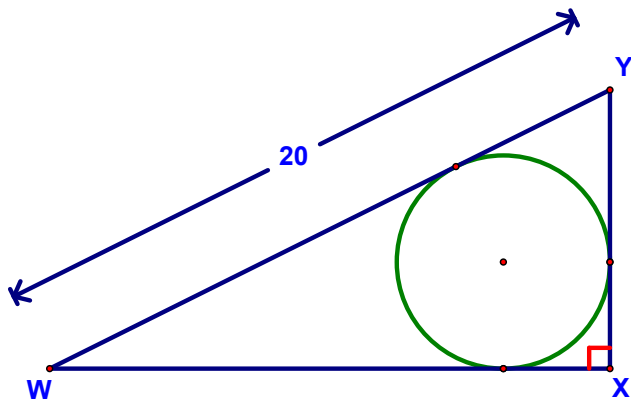
    b. Do the circles intersect?

14.

The centers of two circles with radii of 3 and 5 are 10 units apart. Find the length of a common internal tangent.

16.

    ⊙A, ⊙B, and ⊙C are all externally tangent to each other. AB = 8, BC = 13, and AC = 11. Find the radii of the three ⊙s.

22.

    Find the perimeter of right triangle WXY if the radius of the circle is 4 and WY = 20.

23.

B is 34 mm from the center of ⊙O, which has radius 16 mm. $\overline{BP}$ & $\overline{BR}$ are tangent segments. $\overleftrightarrow{AC}$ is tangent to ⊙O at pointn Q. Find the perimeter of △ABC.