

9.1 Tangent Properties Day 1 Practice
Geometry 3313

Name Key
Date _____ Period _____

Use the figure at the right for exercises 1-3.

1. Find $m\angle BAC$

$$90^\circ$$

2. Find BC

$$\boxed{50}$$

3. Find DC

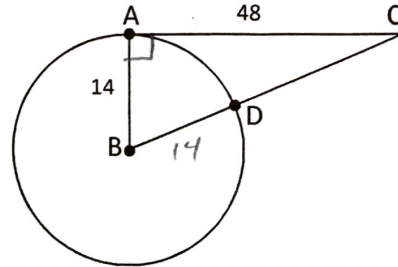
$$50 - 14 = \boxed{36}$$

$$14^2 + 48^2 = BC^2$$

$$196 + 2304 = BC^2$$

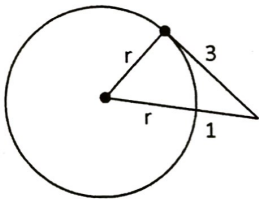
$$2500 = BC^2$$

$$50 = BC$$



Find the radius of each circle.

- 4.



$$r^2 + 3^2 = (r+1)^2$$

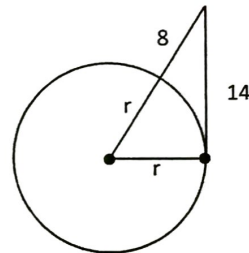
$$r^2 + 9 = r^2 + 2r + 1$$

$$9 = 2r + 1$$

$$8 = 2r$$

$$\boxed{4 = r}$$

- 5.



$$r^2 + 14^2 = (r+8)^2$$

$$r^2 + 196 = r^2 + 16r + 64$$

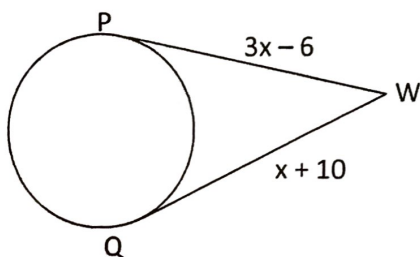
$$196 = 16r + 64$$

$$132 = 16r$$

$$\boxed{8.25 = r}$$

Find the value of x. The segments are tangent to the circles.

- 6.



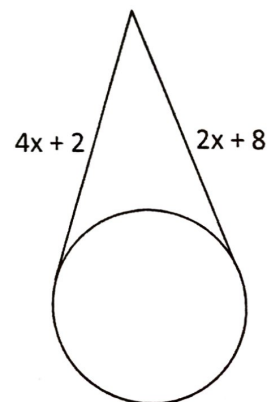
$$3x - 6 = x + 10$$

$$2x - 6 = 10$$

$$2x = 16$$

$$\boxed{x = 8}$$

- 7.



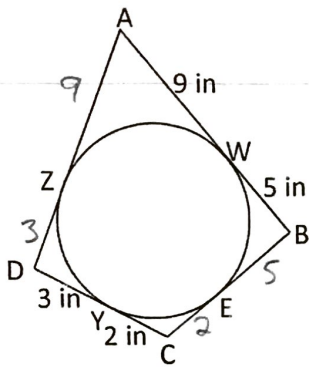
$$4x + 2 = 2x + 8$$

$$2x + 2 = 8$$

$$2x = 6$$

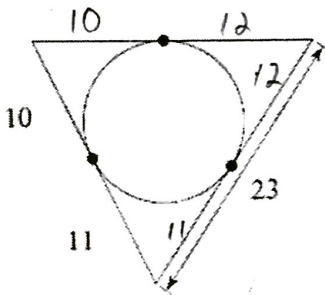
$$\boxed{x = 3}$$

8. Find the perimeter of quadrilateral ABCD.



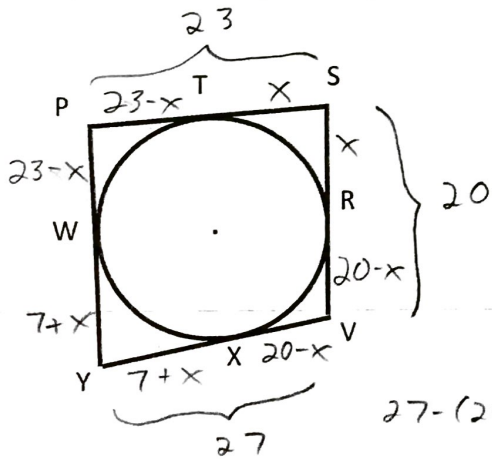
$$P = 9 + 5 + 5 + 2 + 2 + 3 + 3 + 9 = \boxed{38}$$

9. Find the perimeter of the triangle below.



$$P = 22 + 21 + 23 = \boxed{66}$$

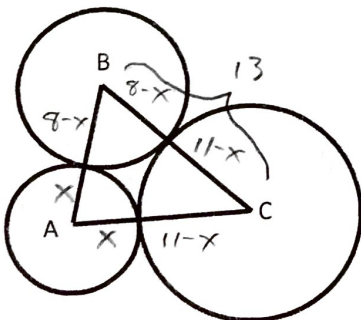
10. Given $PS = 23$, $SV = 20$, $VY = 27$. Find PY .



$$PY = 30$$

$$27 - (20 - x) = 7 + x$$

11. Given three tangent circles A, B, and C such that $AB = 8$, $BC = 13$, and $AC = 11$, find the radii of each of the 3 circles.



$$8 - x + 11 - x = 13$$

$$19 - 2x = 13$$

$$-2x = -6$$

$$x = 3$$