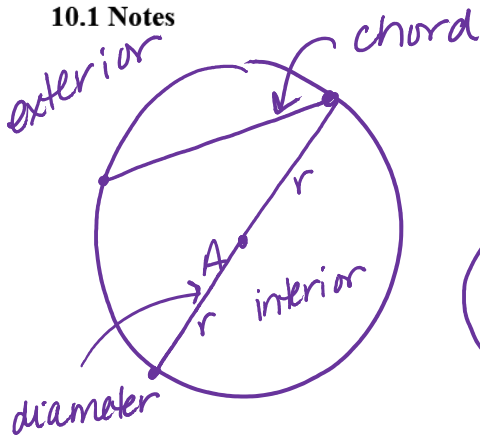
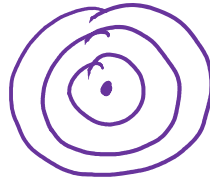


10.1

Thursday, February 26, 2015 11:32 AM



Center O
diameter = $2 \cdot \text{radius}$

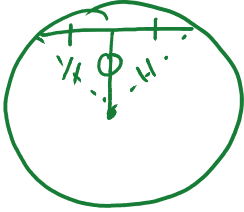


Concentric - share same center

$$\text{Area} = \pi r^2$$

$$\text{Circumference} = \pi \cdot d$$

Distance = distance \perp

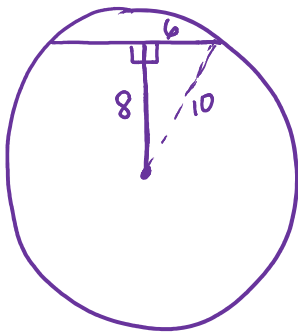


① If a radius is \perp to chord

\longleftrightarrow
bisects the chord

② The \perp bis of the chord passes through center.

1. The distance from the center of a circle to a chord is 8 units. If the circumference of the circle is 20π , what is the length of the chord?

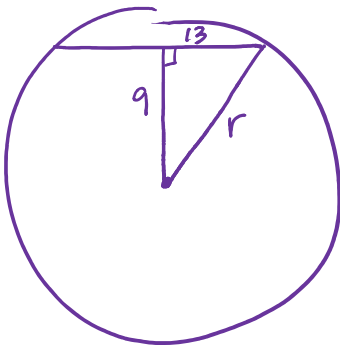


$$C = 20\pi = d\pi \Rightarrow d = 20$$

$$r = 10$$

$$\text{length of chord} = 12$$

2. A chord has length 26 and is 9 units from the center of a circle. What is the area of the circle?

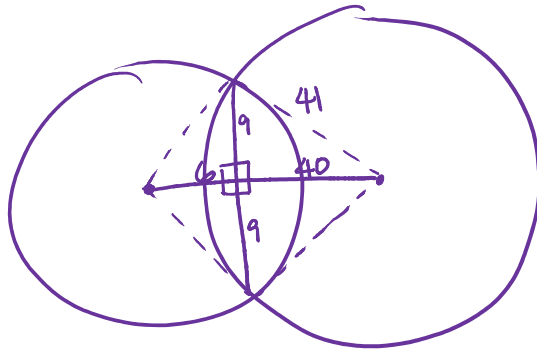


$$r^2 = 9^2 + 13^2$$

$$= 250$$

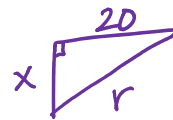
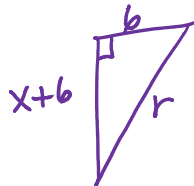
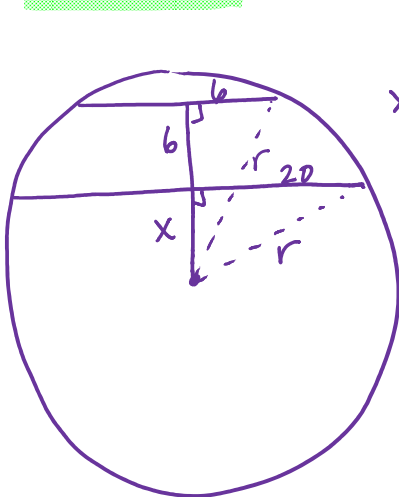
$$A = 250\pi$$

3. Two circles intersect and have a common chord length of ~~10~~¹⁸. The centers are ~~10~~⁴⁶ units apart. The radius of one circle is 41. Find the radius of the other circle.



$$r = 3\sqrt{13}$$

4. Find the radius of a circle in which a 40 cm chord is 6 cm closer to the center than a 12 cm chord.



$$(x+6)^2 + 6^2 = r^2$$

$$x^2 + 20^2 = r^2$$

$$(x+6)^2 + 6^2 = x^2 + 20^2$$

$$x^2 + 12x + 36 + 36 = x^2 + 400$$

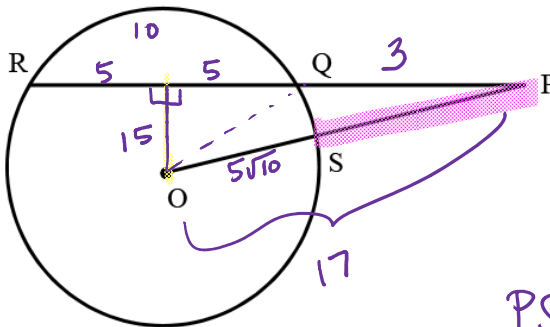
$$12x + 72 = 400$$

$$12x = 328$$

$$x = 27\frac{1}{3}$$

$$r = \sqrt{(27\frac{1}{3})^2 + 400} = 33.87$$

5. In circle O, PQ = 3, RQ = 10, and PO = 17. Find PS.



$$PS = PO - OS = 17 - 5\sqrt{10}$$