Arcs and Chords – Problem Strategies

Geometry

Mr. Bower

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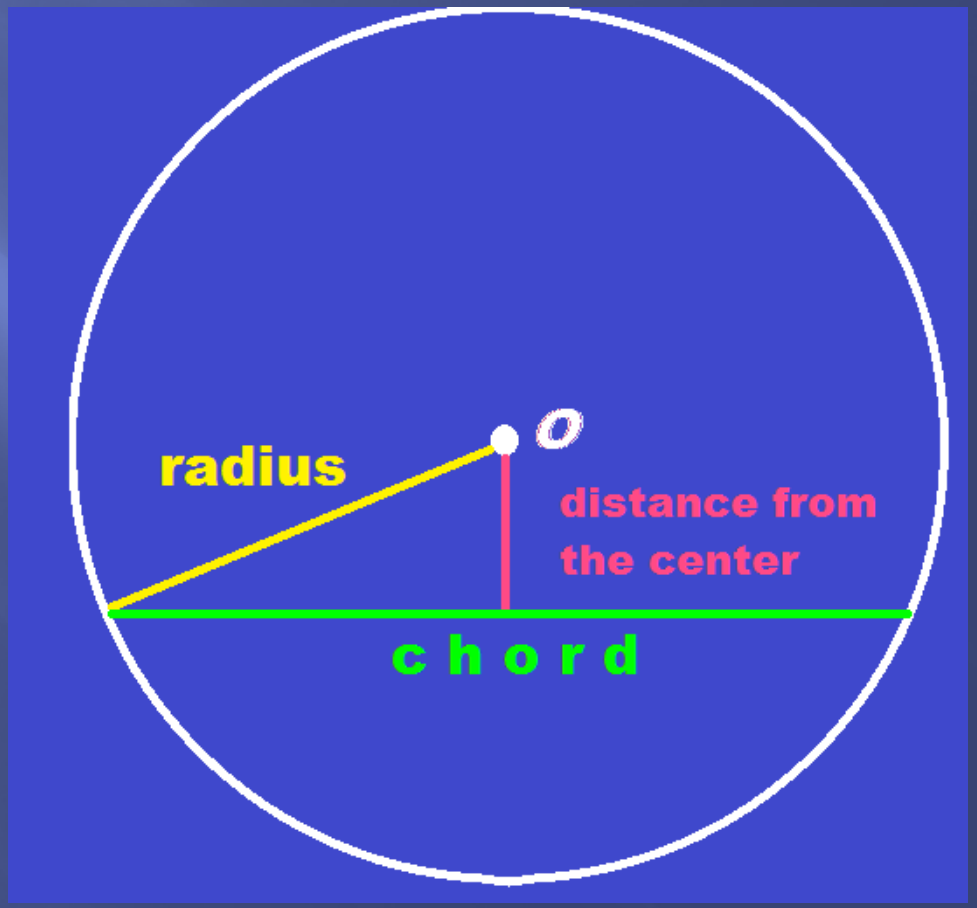
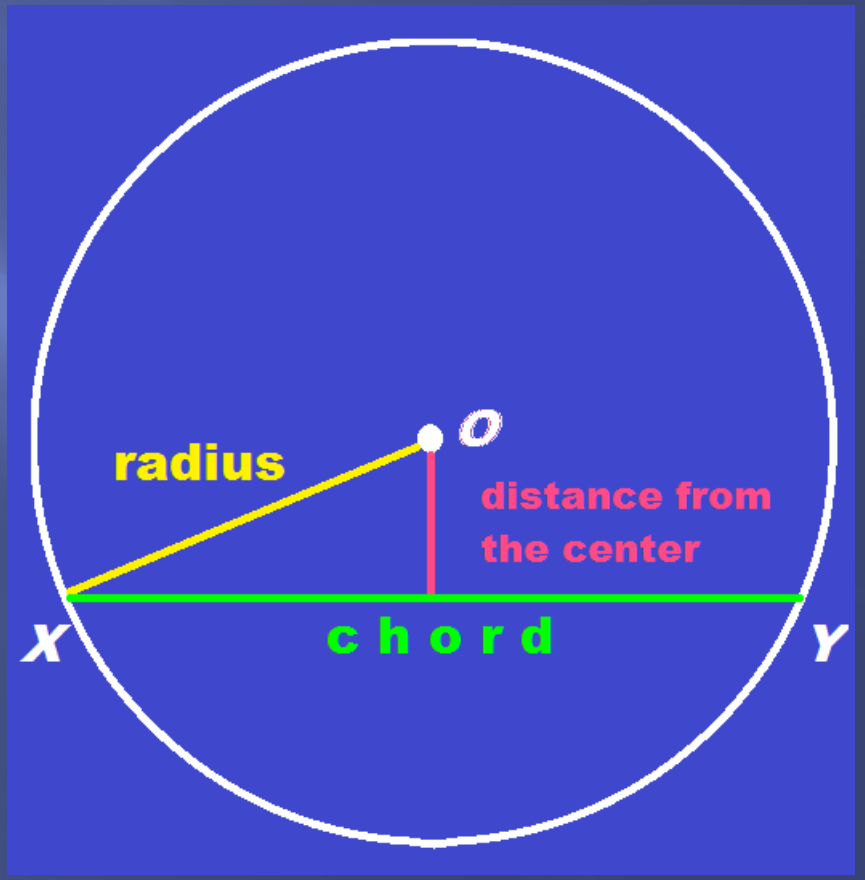
Diagram basics for p 347 #11-18

- Make the radius a **hypotenuse** (not a leg)
- Make the distance from the center a **leg**
- Draw the chord so half of the chord is a **leg**



Example (like #11)

- Sketch a circle O with radius 15 cm and chord $\overline{XY}$ that is 24 cm long. How far is the chord from O?



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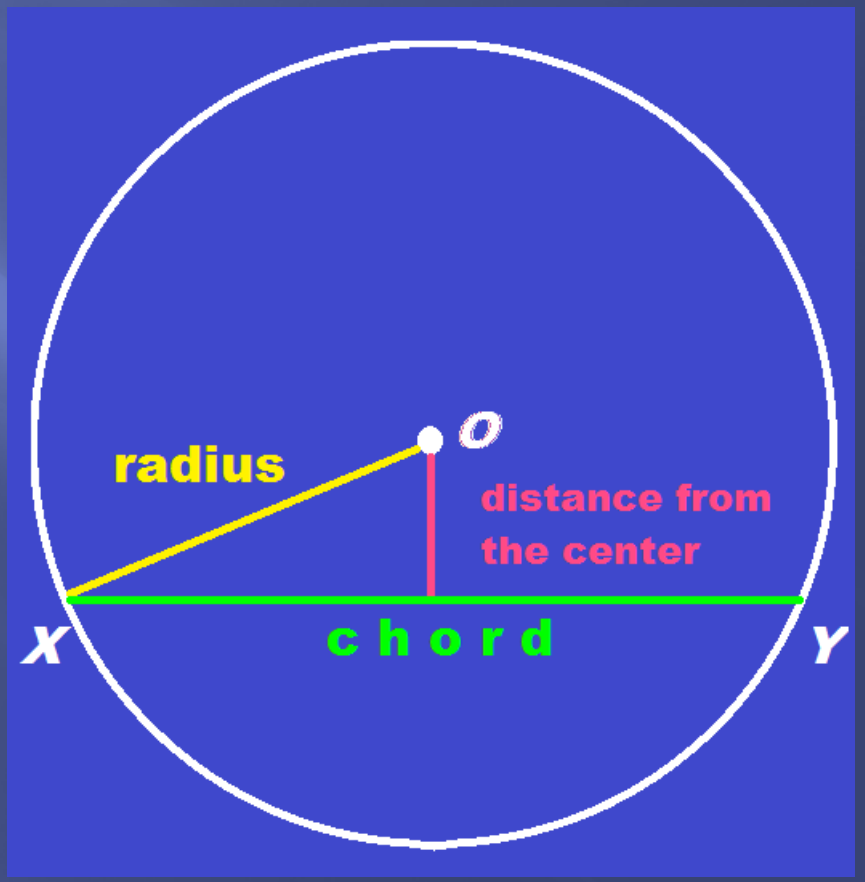

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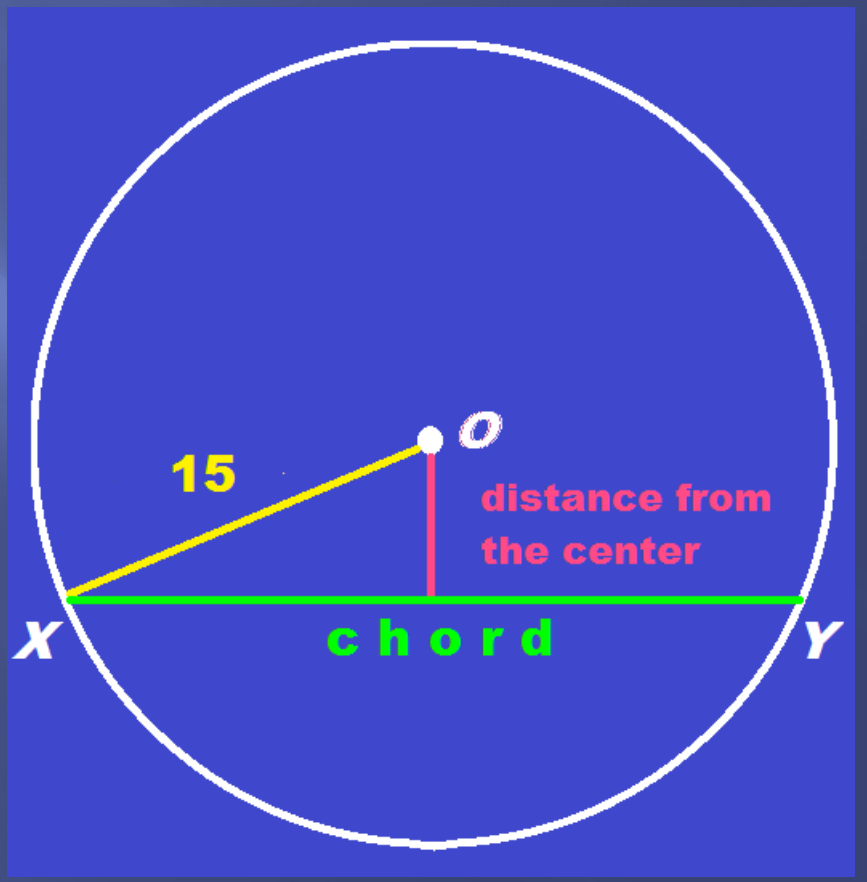

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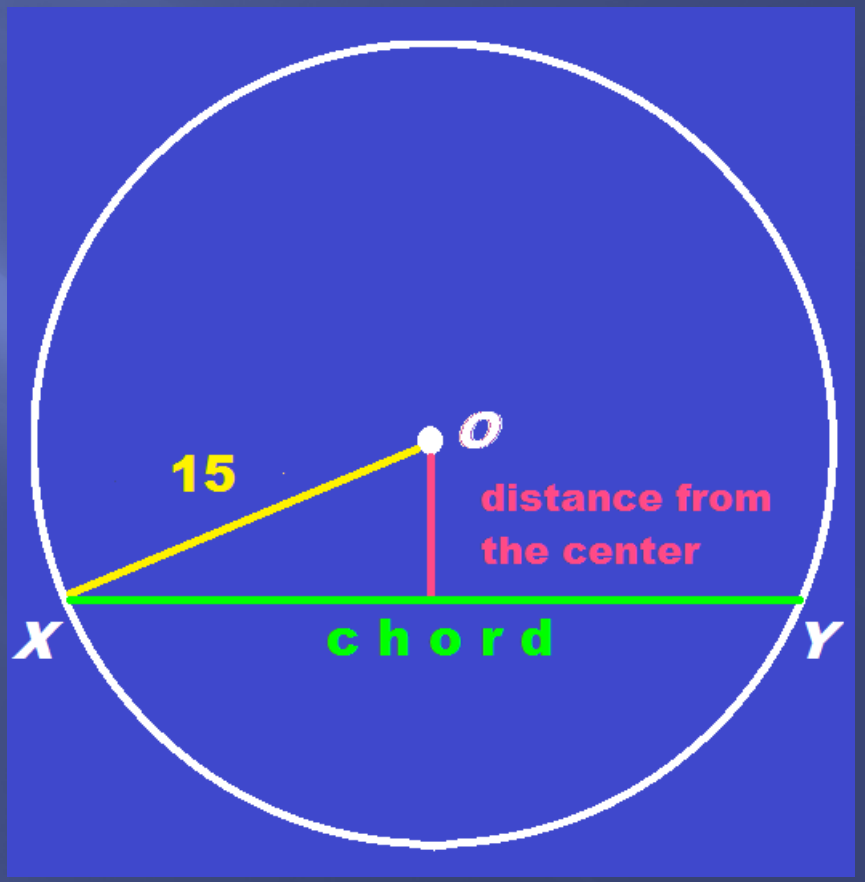

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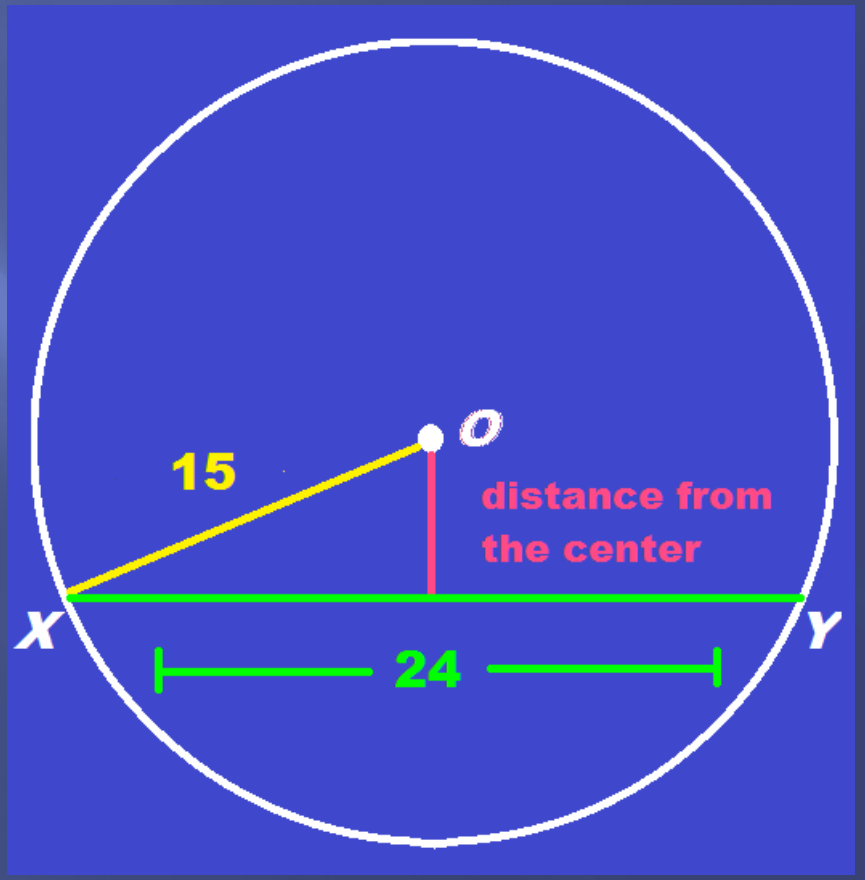
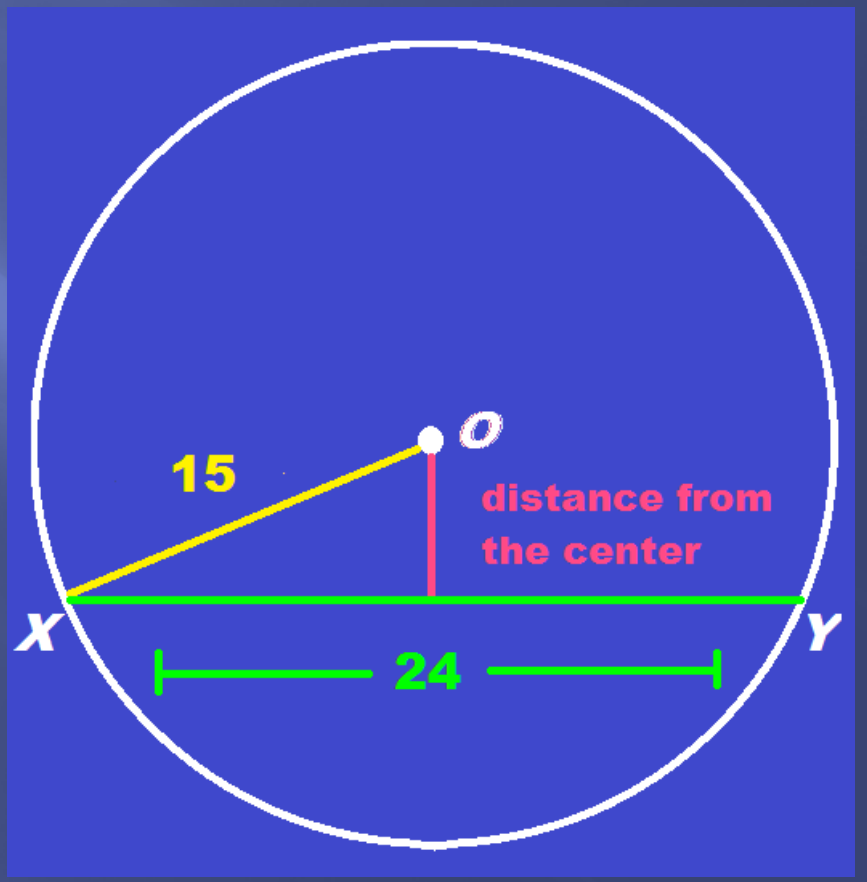


Example (like #11)

- Sketch a circle O with radius 15 cm and chord $\overline{XY}$ that is 24 cm long. How far is the chord from O?

- **Draw chord so half of chord is a leg (each is $24/2 = 12$)**



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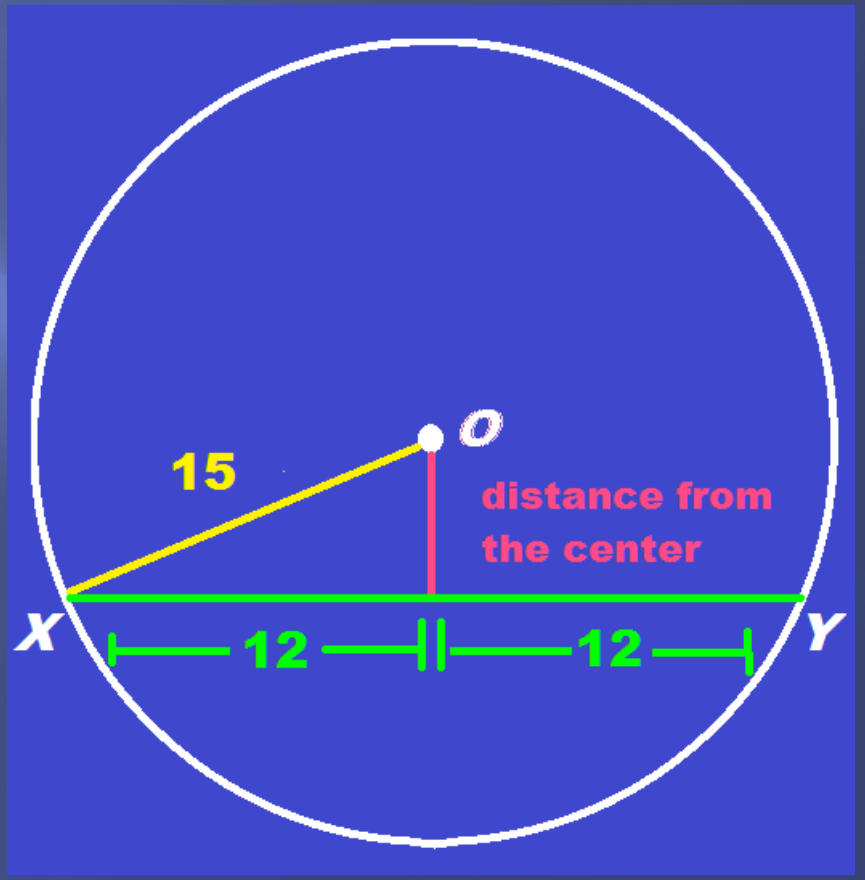
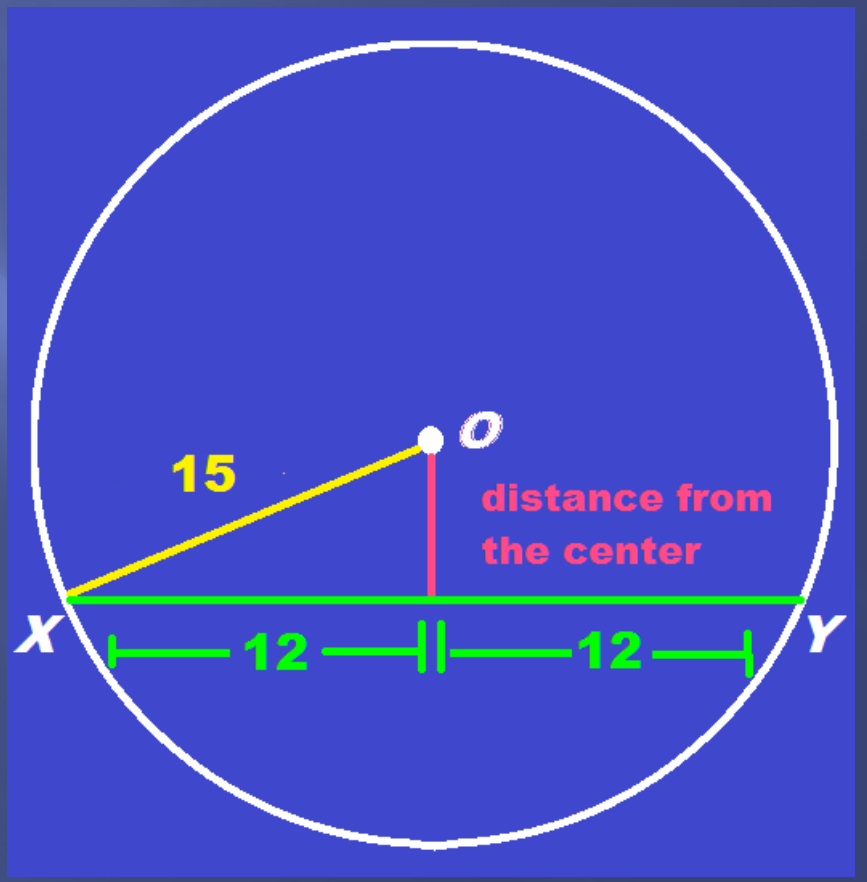


Example (like #11)

- Sketch a circle O with radius 15 cm and chord $\overline{XY}$ that is 24 cm long. How far is the chord from O?

- **We don't know the distance from the center – we'll call it x**



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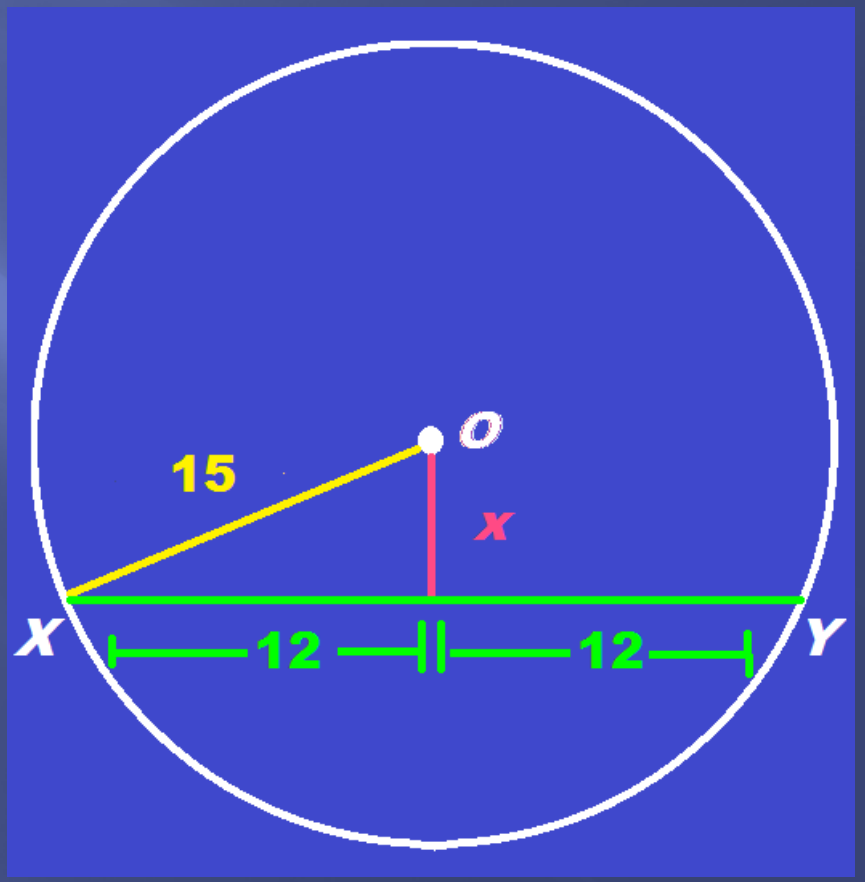

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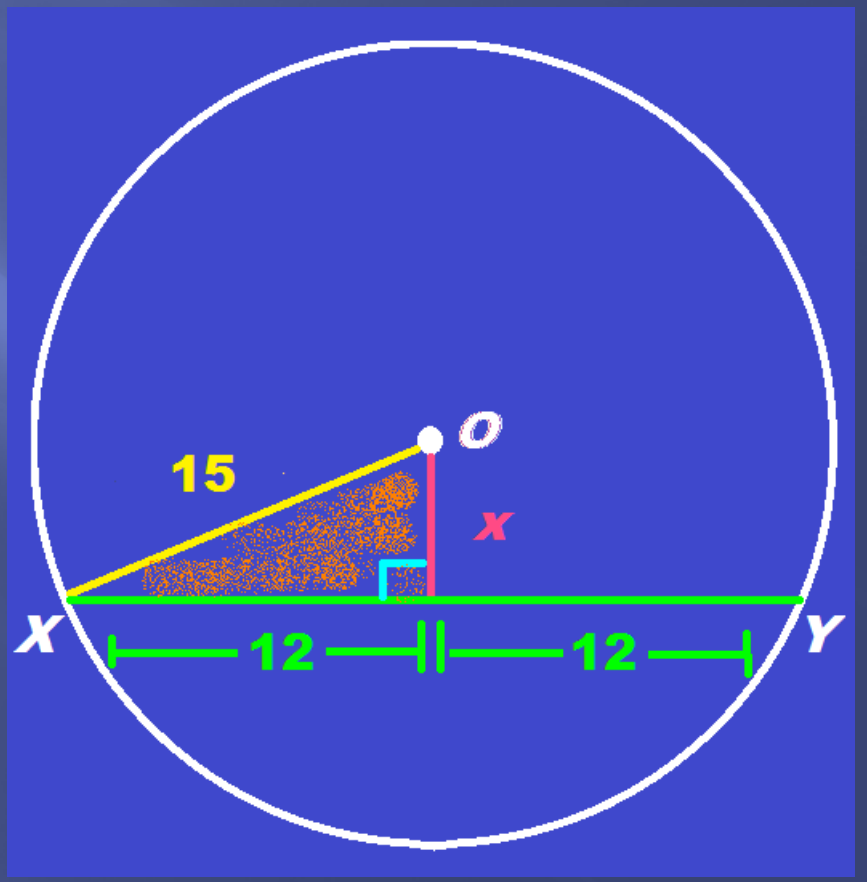
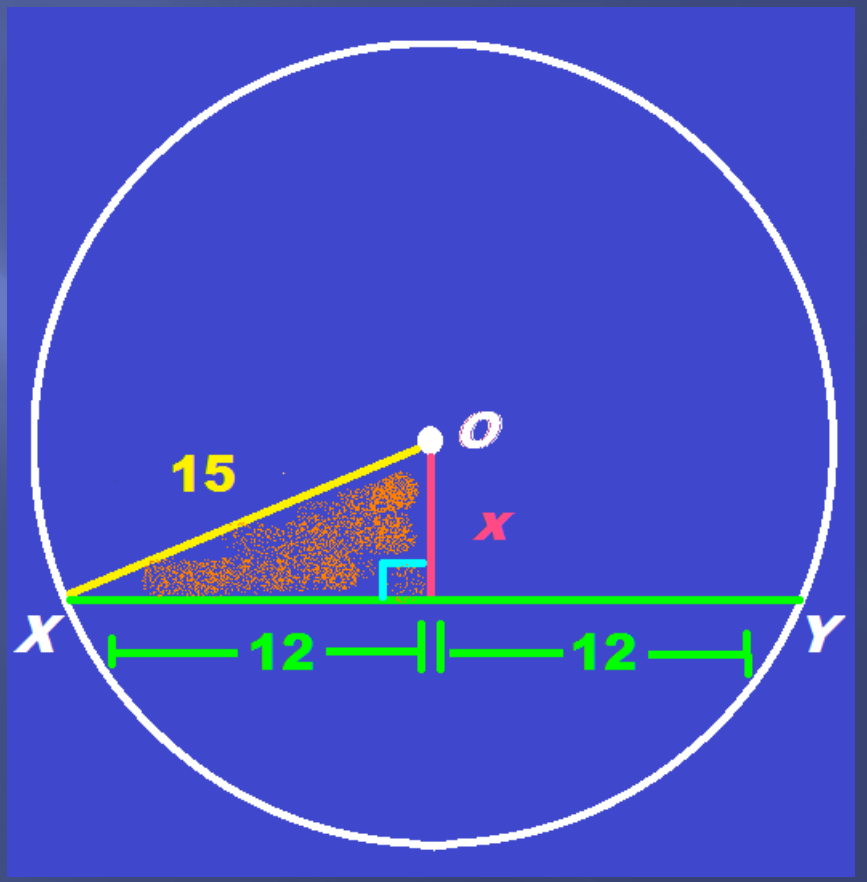
- **We have a right Δ ready for the <u>Pythagorean Theorem</u>!**



Example (like #11)

- Sketch a circle O with radius 15 cm and chord $\overline{XY}$ that is 24 cm long. How far is the chord from O?
- $x^2 + 12^2 = 15^2$
  $x^2 + 144 = 225$
  $x^2 = 225 - 144$
  $x^2 = 81$
  $x = 9$



Example (like #11)

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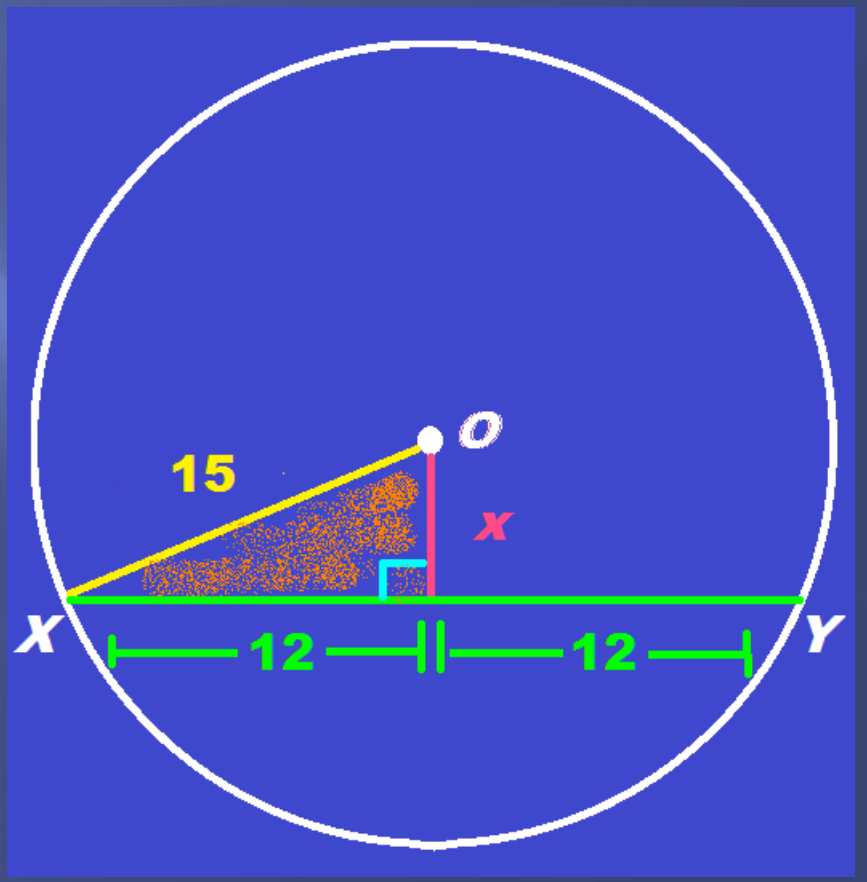
9 cm

Remember to label your answer, if necessary!



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