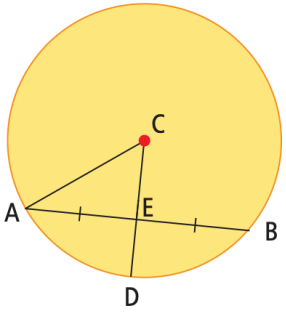
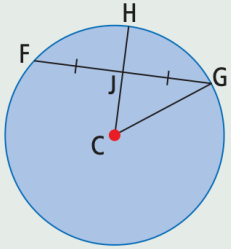
## Example 1: Bisect a Chord With a Radius

Radius CD bisects chord AB. Chord AB measures 8 cm. The radius of the circle is 5 cm. What is the length of line segment CE? Justify your solution.



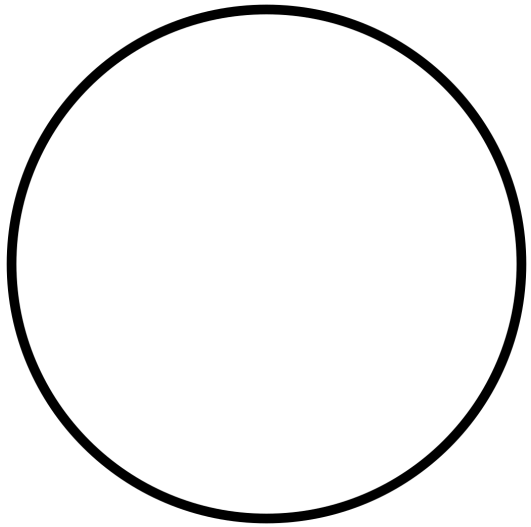

### Show You Know

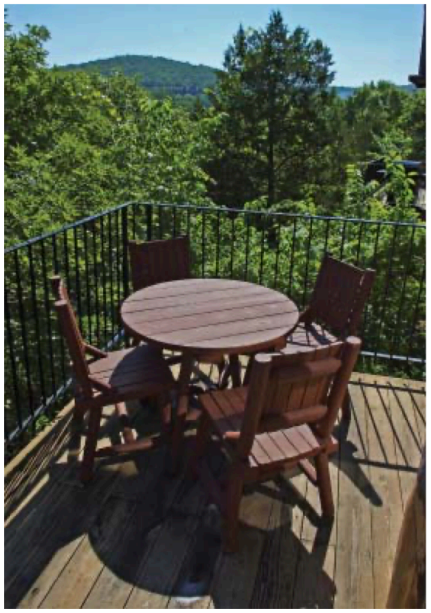
Radius CH bisects chord FG. Chord FG measures 12 cm. The radius of the circle measures 10 cm. What is the length of CJ?




## Example 2: Use Chord Properties to Solve Problems

Louise would like to drill a hole in the centre of a circular table in order to insert a sun umbrella. Use a diagram to explain how she could locate the centre.





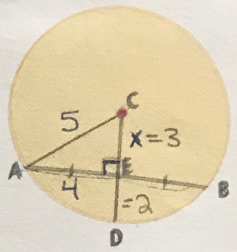
10.2 Exploring Chord Properties

Key Concept: When a radius bisects a chord, it always... 1. meets at a 90° angle (perpendicular) 2. Splits the chord into 2 EQUAL parts

**Example 1: Bisect a Chord With a Radius**

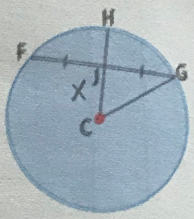
Radius CD bisects chord AB. Chord AB measures 8 cm. The radius of the circle is 5 cm. What is the length of line segment CE? Justify your solution.

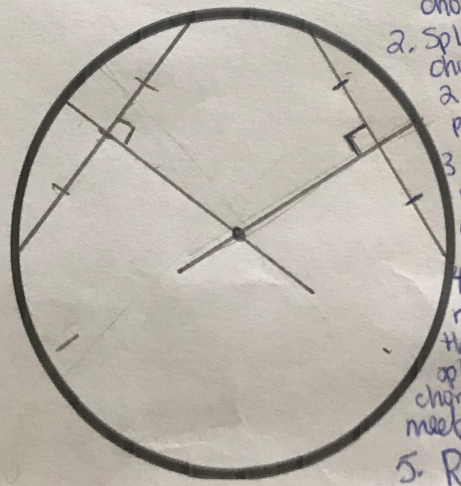
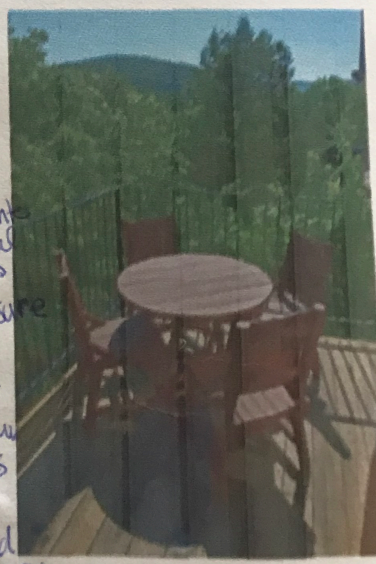
$a^2+b^2=c^2$
$4^2+x^2=5^2$
$16+x^2=25$
$-16 \quad -16$
$x^2=9$
$x=3$




**Show You Know**

Radius CH bisects chord FG. Chord FG measures 12 cm. The radius of the circle measures 10 cm. What is the length of CJ?




**Example 2: Use Chord Properties to Solve Problems**

Louise would like to drill a hole in the centre of a circular table in order to insert a sun umbrella. Use a diagram to explain how she could locate the centre. 1. Draw a chord. 2. Split chord into 2 equal pieces 3. Measure 90° angle 4. Draw radius that splits chord and meets at 90°. 5. Repeat.