Geometry

10.6 Find Segment Lengths in Circles

## Segments of Chords Theorem

equal

segments

products

in

chords

If two \_\_\_\_\_\_\_ intersect \_\_\_\_\_ a circle, then the \_\_\_\_\_\_\_\_\_\_ of the measures of the \_\_\_\_\_\_\_\_\_\_\_ of the chords are \_\_\_\_\_\_\_\_\_\_.

A person is stuck in a water pipe with unknown radius. He estimates that surface of the water makes a 4 ft chord near the top of the pipe and that the water is 6 ft deep. How much room is available for his head?

2(2) = 6x

x = 4/6 = 2/3 ft

Not much room for his head

4

6

## Segments of Secants Theorem

secant

product

exterior

secants

If two \_\_\_\_\_\_\_\_\_\_\_ are drawn to a circle from an \_\_\_\_\_\_\_\_\_\_ point, then the \_\_\_\_\_\_\_\_\_\_\_ of the measures of one \_\_\_\_\_\_\_\_\_\_\_ segment and its \_\_\_\_\_\_\_\_\_\_\_ secant segment is \_\_\_\_\_\_\_\_\_ to the product of the measures of the other secant segment and its external secant segment.

equal

external

Find x in the diagram.

8(8 + 18) = 6(x + 6)

8(26) = 6x + 36

208 = 6x + 36

172 = 6x

28.67 = x

18

x

8

6

## Segments of Secants and Tangents Theorem

square

exterior

secant

tangent

If a \_\_\_\_\_\_\_\_\_\_\_ segment and a \_\_\_\_\_\_\_\_\_\_ segment are drawn to a circle from an \_\_\_\_\_\_\_\_\_\_\_\_ point, then the \_\_\_\_\_\_\_\_\_\_ of the measure of the \_\_\_\_\_\_\_\_\_\_\_\_ segment is equal to the \_\_\_\_\_\_\_\_\_\_\_ of the measures of the \_\_\_\_\_\_\_\_\_\_ segment and its \_\_\_\_\_\_\_\_\_\_\_ secant segment.

secant

product

tangent

external

Find x in the diagram.

5

x

4

Assignment: 692 #2-24 even, 30-42 even = 19