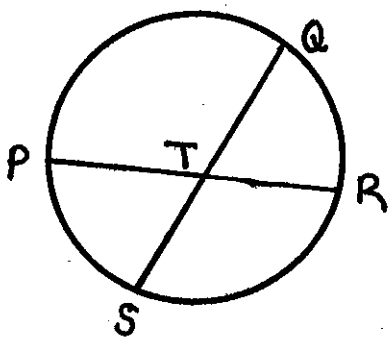
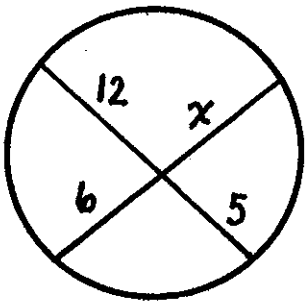
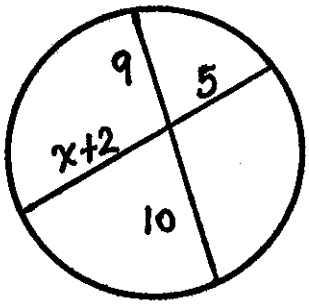
## 6.6 Segment Lengths of Circles

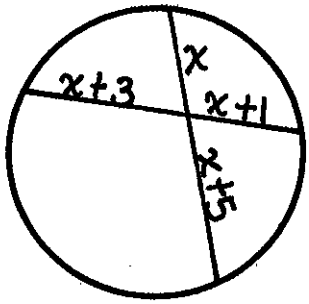
**Theorem 6.16: Segments of Chords Theorem**

If two _____ intersect in the interior of a circle, then the _____ of the lengths of the segments of one chord is equal to the _____ of the lengths of the segments of the other chord.



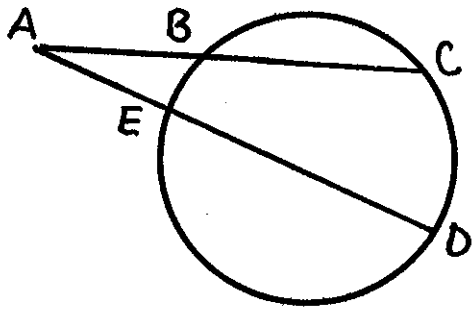



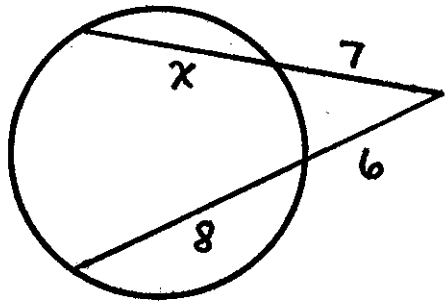



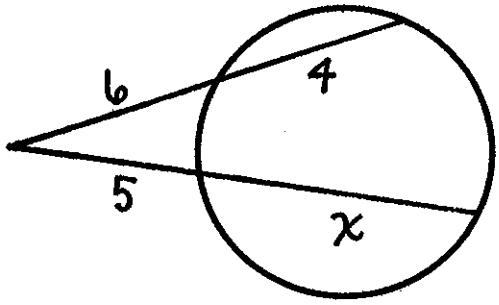



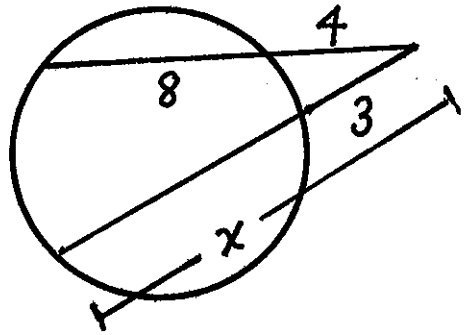
**Theorem 6.17: Segments of Secants Theorem**

If two secant segments share the same endpoint _____ a circle, then the product of the lengths of one _____ segment and its _____ segment equals the _____ of the lengths of the other _____ segment and its _____ segment.



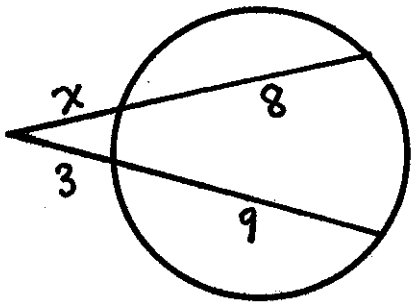



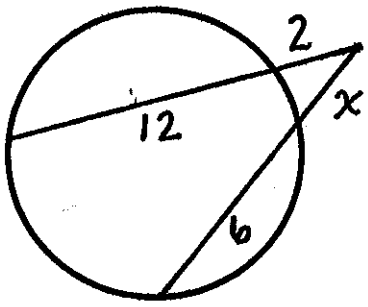



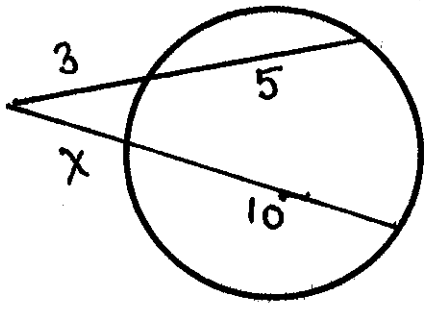



When $x$ is the external segment, you will always have a _____ equation.

You can use the _____ _____ to solve each equation.

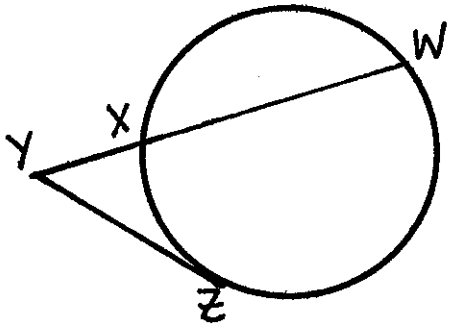


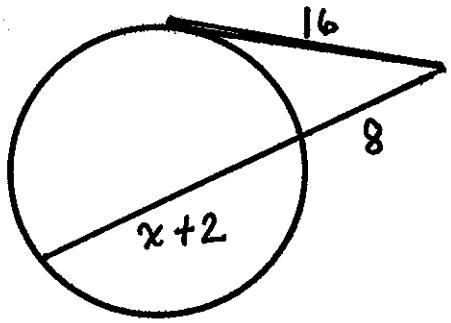



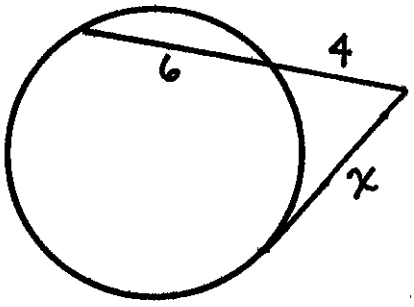



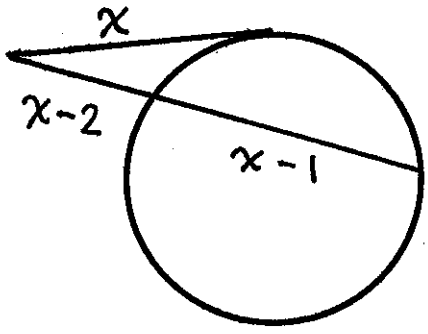
**Theorem 6.18: Segments of Secants and Tangents Theorem**

If a _____ and a _____ segment share an endpoint _____ a circle, then the product of the lengths of the _____ segment and its _____ segment equals the _____ of the length of the _____ segment.



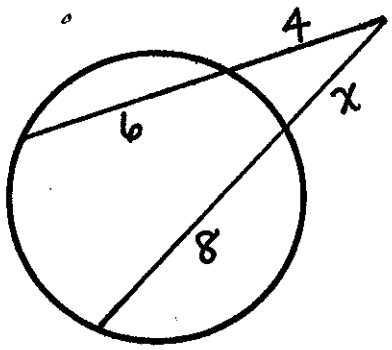



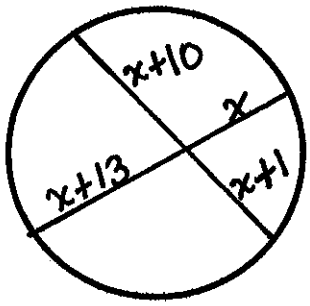



**Set up an equation and solve for $x$.**

**1.** $x =$




**2.** $x =$




**3.** $x =$