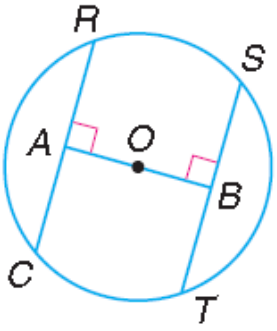
Name: _____

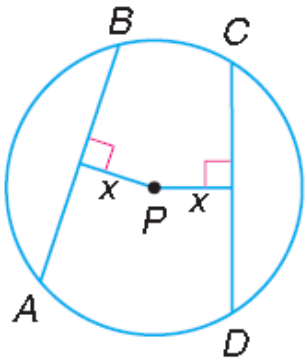
Arcs and Chords

Exercise 1: In the circle with center *O*, *O* is the midpoint of $\overline{AB}$. If *CR*=-3*x* + 56 and *ST* = 4*x*, find *x*.



Exercise 2: Use the figure of the circle with center *P* to find the value of *x*. Justify your answer.

1) *AB* = 2*x* - 4, *CD* = *x* + 3
2) *AB* = 3*x* + 2, *CD* = 4*x* - 1
3) *AB* = 6*x* + 7, *CD* = 8*x* - 13
4) *AB* = 3(*x* + 2), *CD* = 12
5) *AB* = 2(*x* + 1), *CD* = 8*x* - 22
6) *AB* = 4(2*x* - 1), *CD* = 10(*x* - 3)



Exercise 3: Diameter $\overline{AOB}$ of circle O intersects chord $\overline{CD}$ at E and bisects CD at B. Prove that $\overline{AOB}$ bisects the chord $\overline{CD}$ and is perpendicular to chord $\overline{CD}$

Exercise 4: The radius of a spherical ball is 13 centimeters. A piece that has a plane surface is cut off of the ball at a distance of 12 centimeters from the center of the ball. What is the radius of the circular faces of the cut pieces?