Practice

12-4
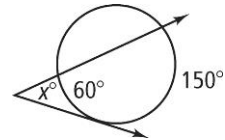
Angle Measures and Segment Lengths

Find the value of *x*.

1.

88°
86°
x°

2.

150°
60°
x°

3.

60° *x*°

4.

140°
38°
x°

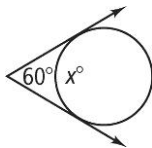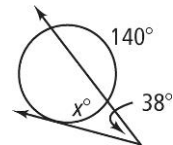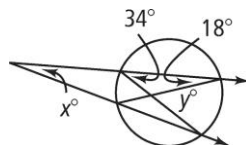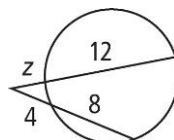**Find the value of each variable using the given chord, secant, and tangent lengths. If the answer is not a whole number, round to the nearest tenth.**
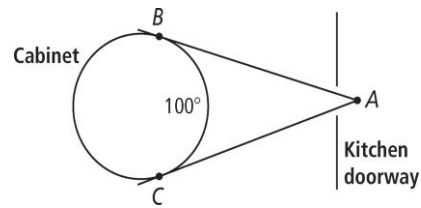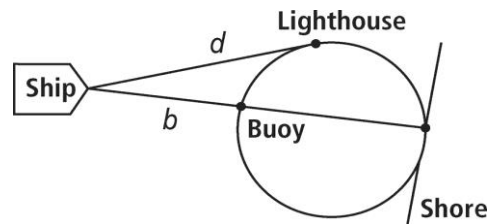
5.

34°   18°
x°   *y*°

6.

12
z
4   8

7. The distance from your ship to a lighthouse is *d*, and the distance to the buoy is *b*. Express the distance to the shore in terms of *d* and *b*.

Cabinet
B
100°
C
A
Kitchen doorway

8. There is a circular cabinet in the dining room. Looking in from another room at point *A*, you estimate that you can see an arc of the cabinet of about 100°. What is the measure of $\angle A$ formed by the tangents to the cabinet?

Lighthouse
d
Ship
b
Buoy
Shore

9. If three tangents to a circle form an equilateral triangle, prove that the tangent points form an equilateral triangle inscribed in the circle.