Practice

Form K

Angles of Elevation and Depression

Describe each angle as it relates to the the diagrams below.

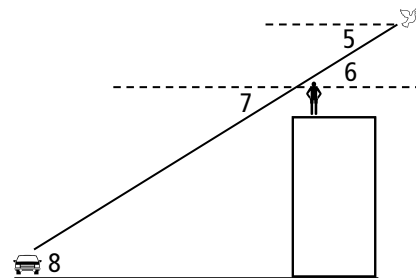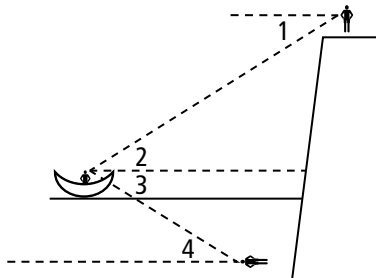**1.** $\angle 1$ **2.** $\angle 2$ **3.** $\angle 3$ **4.** $\angle 4$

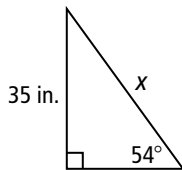**5.** $\angle 5$ **6.** $\angle 6$ **7.** $\angle 7$ **8.** $\angle 8$

Find the value of *x*. Round to the nearest tenth of a unit.

9.

35 in.   *x*   54°

10.

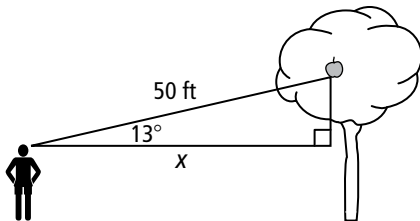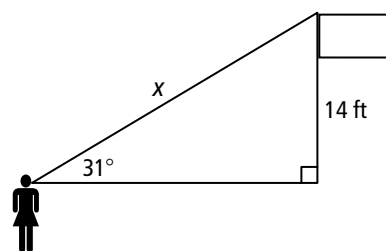29°   20 cm   *x*

11.

50 ft   13°   *x*

12.

x   31°   14 ft

13. A child is standing across the street from his apartment. His mother is on their balcony. The angle of elevation between the child's eyes and his mother's eyes is 22°. If the distance between their eyes is 32 ft, how far is the child standing from his apartment building? Round to the nearest foot.
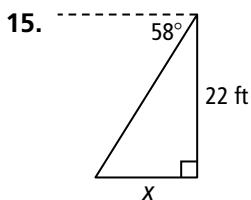
14. A woman looks down from a hot air balloon. She sees a sheep below and measures the angle of depression as 35°. If the sheep is 125 ft from where the woman is looking down from the balloon, how high off the ground is the balloon? Round to the nearest foot.

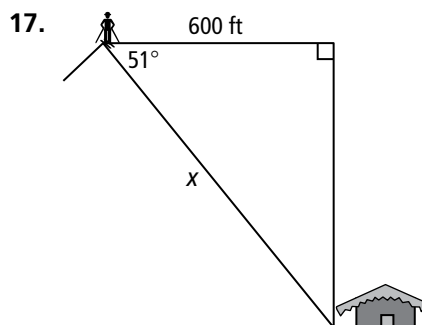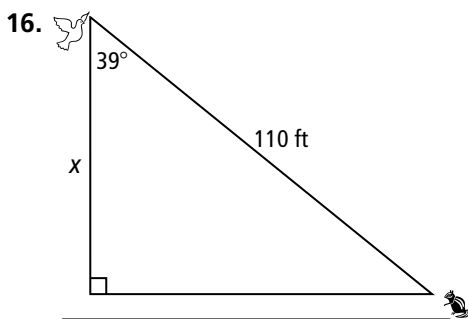# Practice (continued)   *Form K*

Angles of Elevation and Depression

Find the value of *x*. Round to the nearest tenth of a unit.

15.

58° 22 ft x

To start, use alternate interior angles to help you
get an angle measure inside the triangle.

The angle of __?__ is 58°. Since alternate interior
angles are __?__, the angle adjacent to *x* is ☐.

16.

39° 110 ft x

17.

600 ft 51° x

18. Indirect Measurement You are 55 ft from a tree. The angle of elevation from
your eyes, which are 4.5 ft off the ground, to the top of the tree is 61°. To the
nearest foot, how tall is the tree?

Algebra The angle of elevation *e* from *A* to *B* and the angle of depression *d*
from *B* to *A* are given. Find the measure of each angle.

19. *e:* $(3x - 16)°$; *d:* $2(x + 2)°$ **20.** *e:* $(5x - 2)°$; *d:* $6(x - 3)°$

21. *e:* $(3x + 8)°$; *d:* $5(x - 2)°$ **22.** *e:* $(4x - 4)°$; *d:* $5(x - 4)°$

23. The picture below shows a bridge with a roadway hanging from cables that are
attached to towers. Assume you could measure the distances along the bridge
as well as the angles formed by the cables and the roadway. Explain how you
could estimate the length of each cable.