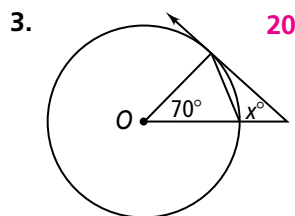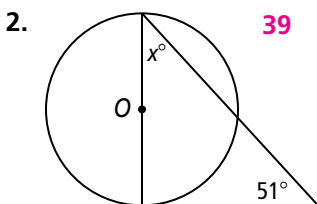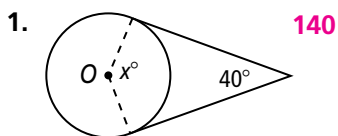# Practice

*Form G*

Tangent Lines

Algebra Assume that lines that appear to be tangent are tangent. *O* is the center of each circle. What is the value of *x?*

1. **140**

2. **39**

3. **20**

The circle at the right represents Earth. The radius of the Earth is about 6400 km. Find the distance *d* that a person can see on a clear day from each of the following heights *h* above Earth. Round your answer to the nearest tenth of a kilometer.
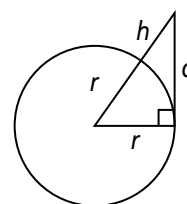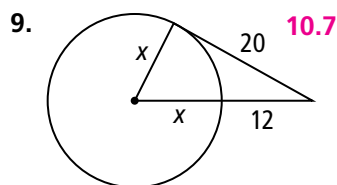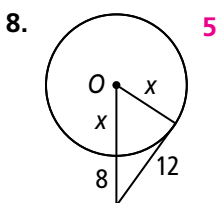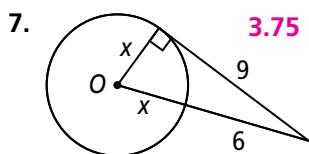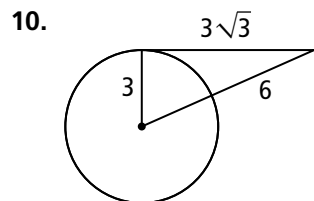

4. 12 km **392.1 km**
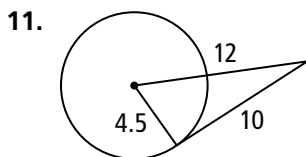
5. 20 km **506.4 km**

6. 1300 km **4281.4 km**

In each circle, what is the value of *x* to the nearest tenth?

7. **3.75**

8. **5**
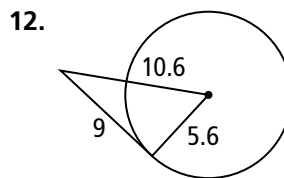

9. **10.7**

Determine whether a tangent line is shown in each diagram. Explain.

10.

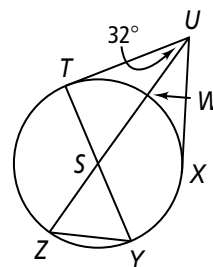**yes; $3^2 + (3\sqrt{3})^2 = 6^2$**

11.

no; $4.5^2 + 10^2 \neq 12^2$

12.

yes; $5.6^2 + 9^2 = 10.6^2$

13. $\overline{TY}$ and $\overline{ZW}$ are diameters of $\odot S$. $\overline{TU}$ and $\overline{UX}$ are tangents of $\odot S$. What is $m\angle SYZ?$ **61**
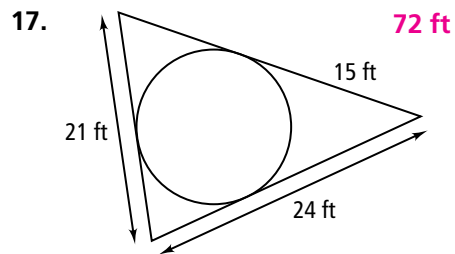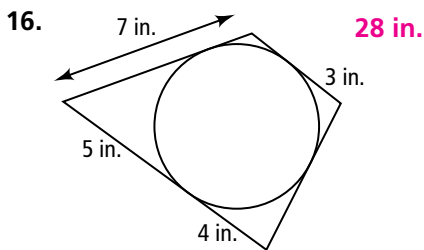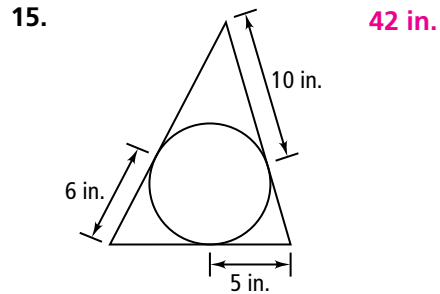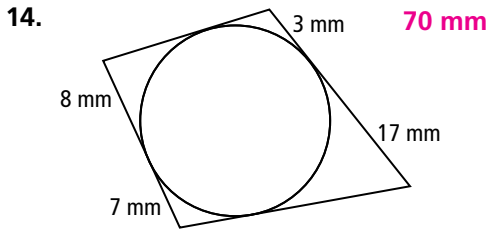
Practice (continued)   *Form G*

Tangent Lines

Each polygon circumscribes a circle. What is the perimeter of each polygon?

14.   3 mm   **70 mm**

8 mm

17 mm

7 mm

15.   **42 in.**

10 in.

6 in.

5 in.

16. 7 in.   **28 in.**

3 in.

5 in.

4 in.

**17.**   **72 ft**

15 ft

21 ft

24 ft

18. Error Analysis A classmate states that $\overline{BC}$ is tangent
to $\odot A$. Explain how to show that your classmate is wrong.

**If $\overline{BC}$ is tangent to $\odot A$, then $\overline{AB} \perp \overline{BC}$ and $m\angle B = 90$; this
cannot be true because the sum of the three angles would
be greater than 180°.**

A

67°

B   28°   *C*
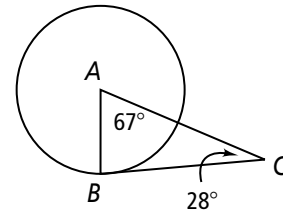
19. The peak of Mt. Everest is about 8850 m above sea level. About how
many kilometers is it from the peak of Mt. Everest to the horizon
if the Earth's radius is about 6400 km? Draw a diagram to help you
solve the problem. **337 km**

8.85

6400   *d*

6400
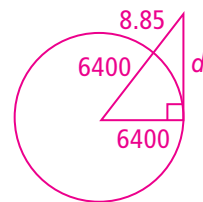
20. The design of the banner at the right includes
a circle with a 12-in. diameter. Using the
measurements given in the diagram,
explain whether the lines shown are
tangents to the circle. **no; $12^2 + 16^2 \neq 21^2$**

16 in.

6 in.   6 in.   9 in.

12 in.

6 in.   6 in.   9 in.

16 in.