## Lessons 13.1–13.3

**MULTIPLE CHOICE**

1. **MARCHING BAND** Your school's marching band is performing at halftime during a football game. In the final formation, the band members form a circle 100 feet wide in the center of the field. You start at a point on the circle 100 feet from the goal line, march 300° around the circle, and then walk toward the goal line to exit the field. How far from the goal line are you at the point where you leave the circle? *TEKS a.1*
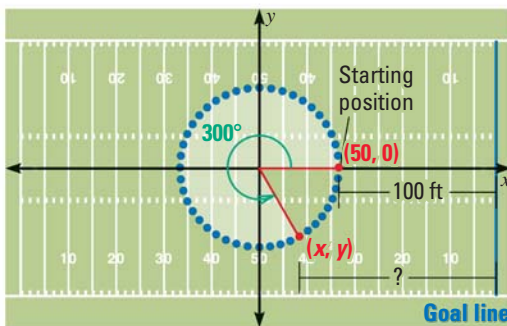


- (A) 30 feet
- (B) 120 feet
- (C) 125 feet
- (D) 314 feet

2. **KITE FLYING** You are flying a kite at an angle of 70°. You have let out a total of 400 feet of string and are holding the reel steady 4 feet above the ground. A friend watching the kite estimates that the angle of elevation to the kite is 85°. About how far from your friend are you standing? *TEKS a.4*
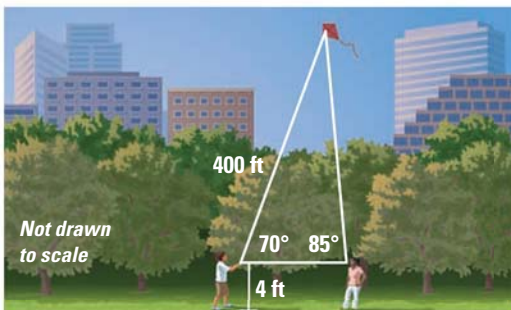


- (F) 33 feet
- (G) 104 feet
- (H) 170 feet
- (J) 171.2 feet

3. **SEARS TOWER** You are standing 100 meters from the main entrance of the Sears Tower in Chicago, Illinois. You estimate that the angle of elevation to the top of the building is 77°. A friend is at the top of the building. What is the approximate straight-line distance between you and your friend? *TEKS a.1*

- (A) 386 meters
- (B) 433 meters
- (C) 445 meters
- (D) 622 meters

4. **PIZZERIA** A pizzeria has two sizes of pizza. A large pizza has a radius of 8 inches and a small pizza has a radius of 6 inches. What is the angle measure of a slice of a small pizza that has approximately the same area as a 30° slice of a large pizza? *TEKS a.1*

- (F) 35.9°
- (G) 40.0°
- (H) 53.3°
- (J) 96.0°

5. **ANGLE MEASURES** For which of the following angles is the secant positive and the cotangent negative? *TEKS a.1*

- (A) 50°
- (B) 130°
- (C) 230°
- (D) 310°

**GRIDDED ANSWER** ⓪ ① ● ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

6. **REFERENCE ANGLE** What is the reference angle, in degrees, for the angle $\theta = 560°$? *TEKS a.1*

7. **SPACE NEEDLE** The top of the Space Needle in Seattle, Washington, is a revolving, circular restaurant. The restaurant has a radius of 47.25 feet and makes one complete revolution in about an hour. You have dinner at a window table from 7:00 P.M. to 8:55 P.M. How many feet do you revolve? Round your answer to the nearest tenth of a foot. *TEKS a.1*