**4.** **CONSTRUCTION** A 30-foot ladder leaning against the side of a house makes a 70.1° angle with the ground.

**b.** What is the horizontal distance

between the bottom of the ladder and the house?

**3.** **PHYSICS** Suppose you are traveling in a car when a beam of light passes from the air to the windshield. The measure of the angle of incidence *θi* is 55°, and the measure of the angle of refraction *θr* is 35.25°. Use Snell’s Law, $\frac{\sin(θ\_{i})}{\sin(θ\_{r})}=n$, to find the index of refraction *n* of the windshield to the nearest thousandth.

**5.** **OBSERVATION** A person standing

100 feet from the bottom of a cliff notices a tower on top of the cliff. The angle of elevation to the top of the cliff is 30°, and the angle of elevation to the top of the tower is 58°. How tall is the tower?

**Word Problem Practice**

***Right Triangle Trigonometry***

30 ft

70.1°

*Glencoe Precalculus*

Chapter 4

**8**

Determine the length of the ramp.

**b.**

Draw a diagram to represent

the situation.

**a.**

**a.** How far up the side of the house does

the ladder reach?

**7.** **SKATEBOARD** Suppose you want to construct a ramp for skateboarding with a

19° incline and a height of 4 feet.

**c.**

**b.**

Find the radius of the circumscribed

circle.

What is the length of a side of the hexagon?

What is the perimeter of the hexagon?

**a.**

4.8 cm

**6.** **GEOMETRY** The apothem of a regular polygon is the measure of the line segment from the center of the polygon to the midpoint of one of its sides. A circle is circumscribed about a regular hexagon with an apothem of 4.8 centimeters.

30°

100 ft

58°

**2.** **SUBMARINES** A submarine that is

250 meters below the surface of the ocean begins to ascend at an angle of 22° from vertical. How far will the submarine travel before it breaks the surface of the water?

**1.** **MONUMENTS** The Leaning Tower of Pisa in Italy is about 55.9 meters tall and is leaning so it is only about 55 meters above the ground. At what angle is the tower leaning?

**4-1**

NAME DATE PERIOD





**b.** What is the horizontal distance

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