

Name \_\_\_\_\_

# 10-1A Lesson Master

**Questions on SPUR Objectives**  
See Student Edition pages 724–727 for objectives.

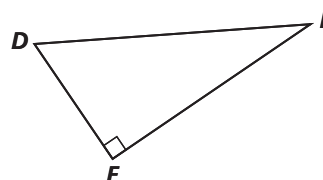
## SKILLS Objective A

In 1-3, approximate the value to the nearest thousandth.

1.  $\sin 31^\circ =$  \_\_\_\_\_      2.  $\tan 89^\circ =$  \_\_\_\_\_      3.  $\cos 2.1^\circ =$  \_\_\_\_\_

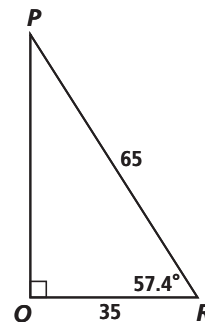
## PROPERTIES Objective E

4. Refer to the triangle at the right and give each ratio in terms of  $DE$ ,  $EF$ , and  $DF$ .



- a.  $\sin D =$  \_\_\_\_\_      b.  $\cos D =$  \_\_\_\_\_  
c.  $\tan E =$  \_\_\_\_\_      d.  $\tan D =$  \_\_\_\_\_

5. Write an equation that can be solved to calculate the length of side  $PQ$  in the triangle at the right using



- a. the sine function. \_\_\_\_\_  
b. the tangent function. \_\_\_\_\_  
c. the Pythagorean Theorem. \_\_\_\_\_
6. Use a 45-45-90 triangle to explain why  $\tan 45^\circ = 1$ .

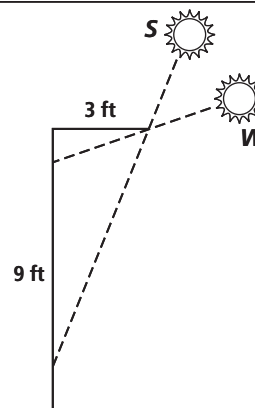
\_\_\_\_\_  
\_\_\_\_\_

## USES Objective G

7. The largest angle a 16-ft ladder can make with the ground is  $75^\circ$ . What is the highest the ladder can reach? \_\_\_\_\_

8. An airline pilot wants to ascend at an angle of no more than  $2^\circ$ . How many miles from the airport will she be when she is 32,000 ft off the ground? (1 mi = 5280 ft) \_\_\_\_\_

9. Refer to the diagram at the right. An architect designs a home with a 3-ft wide roof overhang so the sunlight will warm the house in the winter, and shade will cool the house in the summer. The overhang is 9 ft off the ground. How far up the wall will the sunlight reach in the



- a. winter when the sun reaches an angle of elevation of  $22^\circ$  when viewed from the end of the overhang? \_\_\_\_\_  
b. summer when the sun reaches an angle of elevation of  $71^\circ$  when viewed from the end of the overhang? \_\_\_\_\_

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