

Name _____

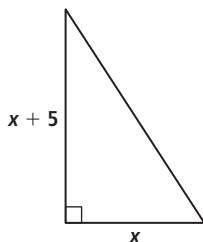
9-7A Lesson Master

Questions on SPUR Objectives

See pages 576–579 for objectives.

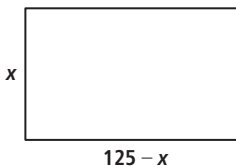
USES Objectives E and F

1. Refer to the triangle at the right. If the area of the triangle is 24 square inches and the height of the triangle is 5 inches longer than its base, find the measure of the height to the nearest hundredth of an inch.



2. How many diagonals does a 14-sided polygon have? _____
3. Is it possible for a polygon to have 83 diagonals? If so, how many sides does that polygon have? _____
4. Is it possible for a polygon to have 65 diagonals? If so, how many sides does that polygon have? _____
5. A circle and a rectangle have equal areas. One side of the rectangle is 3 inches shorter than the other side, and the perimeter of the rectangle is 30 inches. Calculate the radius of the circle to the nearest hundredth. _____

6. Farmer Bill has 250 feet of fencing to enclose his rectangular field as pictured at the right.



- a. Use the diagram to write an equation for the area A of the field.

- b. What value of x will result in the greatest possible area for Farmer Bill's field? _____

7. Suppose the equation $y = 0.02x^2 - 4x + 200$ represents the length y of each vertical cable in feet on a bridge at the distance x feet from the end of the bridge.
- a. What is the length of a vertical cable that is 40 feet from the end of the bridge? _____
- b. If a vertical cable is 18 feet long, where is its location on the bridge? _____