Name _____

6-7B Lesson Master

Questions on SPUR Objectives
See Student Edition pages 446–449 for objectives.

SKILLS Objective C

1. Tell whether each of the following equations is in the correct form to solve using the quadratic formula.

   a. $x^2 + x = 15$ _____

   b. $32x^2 + 15x + 21 = 0$ _____

   c. $x^2 - 5 = 0$ _____

   d. $\frac{1}{5}x = x^2$ _____

   e. $3 - 4x + 4x^2 = 0$ _____

   f. $0.045x^2 + 0.06x - 4 = 0$ _____

   g. $(x + 6)^2 = 0$ _____

   h. $(x - 3)(x + 4) = 0$ _____

In 2–9, solve the equation.

2. $x^2 + 8x + 12 = 0$ _____

3. $n^2 - 6n - 27 = 0$ _____

4. $0 = x(x - 12)$ _____

5. $5x^2 + 6x = 0$ _____

6. $(4x + 1)(2x - 3) = 3(x + 4)$ _____

7. $5(x^2 - 7x) = 10$ _____

8. $x^2 + 2 = 3x + 11$ _____

9. $(x - 11)^2 = (3x + 6)^2$ _____

10. Use the quadratic formula to find the intersections of the graphs of $y = x^2 - 2x + 2$ and $y = -x + 4$.

    _____

11. As a first step in solving an equation, Debby wrote
    $x = \dfrac{-(-1) \pm \sqrt{(-1)^2 - 4(2)(-7)}}{2(2)}$. What equation was Debby solving?

    _____

Name _____

6-7B

USES Objective I

12. A square and a rectangle have the same area. The length of the rectangle is 8 less than twice the side of the square. The width of the rectangle is 3 less than the side of the square.

a. Let x represent the length of the side of the square. Write expressions for the dimensions of the rectangle.

Length _____   Width _____

b. Write an equation that represents the situation. _____

c. Find the dimensions of the square and rectangle.

Square _____   Rectangle _____

13. Juan hit a fast ball thrown by Liz. Let x be the distance on the ground in feet of the ball from home plate and $h(x)$ be the height in feet of the ball at that distance. Suppose the path of the ball is described by the function $h(x) = -0.006x^2 + 2.5x + 4$.

a. How high was the ball when Juan hit it?   _____

b. How far from the plate, along the ground, was the ball when it was the same height at which Juan hit it?   _____

c. How far from the plate, along the ground, was the ball when it was 100 feet high?   _____

d. The fence is 405 feet away from home plate, and it is 12 feet high. Did the ball go over the fence? Explain your reasoning.

_____

_____

14. A toy rocket was shot straight up with an initial velocity of $75 \frac{m}{sec}$. The platform from which the rocket was shot is 2.3 meters high.

a. When was the rocket 100 meters above the ground? _____

b. When did the rocket hit the ground? _____

c. Will the rocket ever reach 300 meters? Explain.

_____

_____