

Name _____

6-10B Lesson Master

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

SKILLS Objective C

In 1–8, solve the equation. Write nonreal numbers in $a + bi$ form.

1. $2x^2 - 7x + 15 = 0$ _____
2. $3x = 7 + 5x^2$ _____
3. $-4(2n^2 - 2n) = 3(n + 6)$ _____
4. $t^2 - 1 = 0$ _____
5. $2x^2 - x + 15 = 0$ _____
6. $2h^2 - h - 15 = 0$ _____
7. $(3m + 1)^2 - 5 = 0$ _____
8. $16x^2 - 72x + 81 = 0$ _____

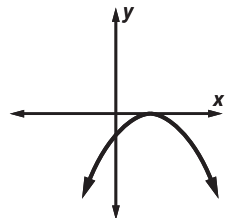
PROPERTIES Objective H

In 9–16, a. find the discriminant of each equation, b. give the number of solutions, and c. tell whether the solutions are *rational*, *irrational*, or *nonreal*.

9. $x^2 - 3x + 6 = 0$ a. _____ b. _____ c. _____
10. $2r^2 - r - 40 = 0$ a. _____ b. _____ c. _____
11. $t^2 - 8t + 16 = 0$ a. _____ b. _____ c. _____
12. $5x^2 - 6x - 11 = 0$ a. _____ b. _____ c. _____
13. $15x^2 - 3x + 7 = 0$ a. _____ b. _____ c. _____
14. $15h^2 - 11h - 14 = 0$ a. _____ b. _____ c. _____
15. $x^2 + x + 1 = 0$ a. _____ b. _____ c. _____
16. $x^2 - x - 1 = 0$ a. _____ b. _____ c. _____

17. The graph at the right shows a quadratic function $y = ax^2 + bx + c$. Determine whether each expression is *positive*, *negative*, or *zero*.

- a. a _____
- b. $b^2 - 4ac$ _____
- c. c _____



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REPRESENTATIONS Objective K

18. Does the parabola with equation $y = -\frac{1}{4}x^2 + x - 3$ ever intersect the line with equation $y = -2$? If so, how many points of intersection are there? Explain your reasoning.

19. The graph of $y = 4x^2$ has one x -intercept. How many x -intercepts does the graph of $y = 4(x - h)^2$ have? Explain your reasoning.

REPRESENTATIONS Objective L

In 20–23, without drawing a graph, determine the number of real solutions.

20. $5z = 12z^2 - 5$ _____

21. $19n^2 = 7n$ _____

22. $6c^2 - c + 15 = 0$ _____

23. $9 - 12t = t^2 - 3$ _____

In 24 and 25, give the number of x -intercepts of the graph of the parabola.

24. $y = 15x^2 + 7$ _____

25. $y + 14 = -3(x - 2)^2$ _____

In 26–28, suppose D is the discriminant for a quadratic equation. Sketch a possible graph of the equation.

26. $D = 0$

27. $D > 0$

28. $D < 0$

