

**Practice 10-8**

Using the Discriminant

Find the number of real solutions of each equation.

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|-------------------------------|-----------------------------|
| 1. $x^2 + 6x + 10 = 0$        | 2. $x^2 - 4x - 1 = 0$       |
| 4. $x^2 - 8x + 15 = 0$        | 5. $x^2 - 5x + 7 = 0$       |
| 7. $3x^2 - 18x + 27 = 0$      | 8. $4x^2 - 8 = 0$           |
| 10. $-x^2 = 4x + 6$           | 11. $4x^2 = 9x - 3$         |
| 13. $7x^2 + 16x + 11 = 0$     | 14. $12x^2 - 11x - 2 = 0$   |
| 16. $16x^2 + 8x = -1$         | 17. $-16x^2 + 11x = 11$     |
| 19. $0.2x^2 + 4.5x - 2.8 = 0$ | 20. $-2.8x^2 + 3.1x = -0.5$ |
| 22. $1.5x^2 - 15x + 2.5 = 0$  | 23. $-3x^2 + 27x = -40$     |
25. One of the games at a carnival involves trying to ring a bell with a ball by hitting a lever that propels the ball into the air. The height of the ball is modeled by the equation  $h = -16t^2 + 39t$ . If the bell is 25 ft above the ground, will it be hit by the ball?

Find the number of  $x$ -intercepts of each function.

29.  $y = x^2 + 10x + 16$
32.  $y = 3x^2 - 3$
35.  $y = x^2 - 8x - 4$
38.  $y = -4x^2 - 5x - 2$