67. Use the graph provided to choose the best
description of what the graph represents.

    Ⓐ A ball is dropped from a height of 42 feet and
lands on the ground after 3 seconds.

    Ⓑ A ball is dropped from a height of 42 feet and
lands on the ground after 1.5 seconds.

    Ⓒ A ball is shot up in the air and reaches a height
of 42 feet after 1 second.

    Ⓓ A ball is shot up in the air, reaches a height
of 42 feet, and lands on the ground after
1.5 seconds.

Ball Height
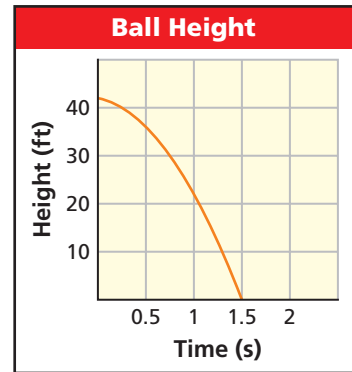
68. Which function has -7 as its only zero?

    Ⓕ $f(x) = x(x - 7)$ Ⓗ $g(x) = (x + 1)(x + 7)$

    Ⓖ $h(x) = (x - 7)^2$ Ⓙ $j(x) = (x + 7)^2$

69. Which expression is a perfect square trinomial?

    Ⓐ $25y^2 - 16$ Ⓒ $25y^2 - 40y + 16$

    Ⓑ $25y^2 - 20y + 16$ Ⓓ $25y^2 - 10y + 16$

70. Gridded Response Find the positive root of $x^2 + 4x - 21 = 0$.

CHALLENGE AND EXTEND

Find the roots of each equation by factoring.

71. $3(x^2 - x) = x^2$ **72.** $x^2 = \frac{1}{3}x$

73. $x^2 - \frac{3}{4}x + \frac{1}{8} = 0$ **74.** $x^2 + x + 0.21 = 0$

75. Another special factoring case involves perfect cubes. The sum of two cubes
can be factored by using the formula $a^3 + b^3 = (a + b)(a^2 - ab + b^2)$.

    a. Verify the formula by multiplying the right side of the equation.

    b. Factor the expression $8x^3 + 27$.

    c. Use multiplication and guess and check to find the factors of $a^3 - b^3$.

    d. Factor the expression $x^3 - 1$.

SPIRAL REVIEW

Evaluate each expression. Write the answer in scientific notation. *(Lesson 1-5)*

76. $(1.4 \times 10^8)(6.1 \times 10^{-3})$ **77.** $(2.7 \times 10^{10})(3.2 \times 10^2)$

78. $\dfrac{(3.5 \times 10^6)}{(1.4 \times 10^{-4})}$ **79.** $\dfrac{(3.12 \times 10^{-6})}{(4.8 \times 10^3)}$

Solve each proportion. *(Lesson 2-2)*

80. $\dfrac{12}{7.5} = \dfrac{n}{5}$ **81.** $\dfrac{1.2}{4.8} = \dfrac{w}{8.8}$ **82.** $\dfrac{6.8}{4.5} = \dfrac{r}{90}$

**Using the graph of $f(x) = x^2$ as a guide, describe the transformations, and then
graph each function.** *(Lesson 5-1)*

83. $h(x) = 0.5x^2$ **84.** $d(x) = x^2 + 2$ **85.** $g(x) = (x + 1)^2$