



2-3 Additional Practice

Factored Form of a Quadratic Function

Factor each quadratic expression.

1. $x^2 + 4x - 21$

2. $x^2 - 2x - 15$

3. $2x^2 - 17x + 30$

Identify the zeros of each function.

4. $y = 5(x - 3)(x + 5)$

5. $y = (x - 9)(x + 4)$

6. $y = (x - 7)^2$

Solve each quadratic equation by factoring.

7. $x^2 = -5x$

8. $-2x^2 + 5x + 12 = 0$

9. $7x^2 + 25x + 12$

10. $5x^2 = 3x + 2$

11. $-4x^2 + 15x + 4 = 0$

12. $x^2 - 4x + 3 = 0$

Identify the interval(s) on which each quadratic function is positive or negative as shown.

13. $y = 2x^2 - 17x + 30$ Positive

14. $y = -7x^2 + 35x - 28$ Positive

15. $y = -x^2 - 6x - 8$ Negative

16. $y = 2x^2 - 4x - 16$ Negative

17. A rock is thrown upward from the edge of a bridge and onto a road that is 10 feet below the bridge. The function $h(x) = -x^2 + 3x + 10$ gives the height, h , in feet, the rock travels in x seconds from the time it was thrown. When will the rock hit the road?

18. Write an equation of a parabola with x -intercepts at $(\frac{1}{4}, 0)$ and $(-7, 0)$ which passes through the point $(0, 7)$.