

Get Ready!

Lessons 2-1
and 4-1

Finding the Domain and Range of Functions

Find the domain and range of each function.

1. $\{(1, 2), (2, 3), (3, 4), (4, 5)\}$

2. $\{(1, 2), (2, 2), (3, 2), (4, 2)\}$

3. $f(x) = (x - 4)^2 - 8$

4. $f(x) = 2x^2 + 3$

Lesson 4-1

Graphing Quadratic Functions

Graph each function.

5. $y = 2x^2 - 4$

6. $y = -3(x^2 + 1)$

7. $y = \frac{1}{2}(x - 3)^2 + 1$

Lesson 4-4

Multiplying Binomials

Multiply.

8. $(3y - 2)(y - 4)$

9. $(7a + 10)(7a - 10)$

10. $(x - 3)(x + 6)(x + 1)$

Lessons 4-5
and 5-3

Solving by Factoring

Solve each equation by factoring.

11. $x^2 - 5x - 14 = 0$

12. $2x^2 - 11x + 15 = 0$

13. $3x^2 + 10x - 8 = 0$

14. $12x^2 - 12x + 3 = 0$

15. $8x^2 - 98 = 0$

16. $x^4 - 14x^2 + 49 = 0$



Looking Ahead Vocabulary

17. Combining two or more elements forms composite chemical mixtures. In some cases, if you change the order in which you mix two chemicals, it can produce very different results. A *composite function* is made by combining two functions. If you are buying a \$60 shirt and there is a 50% off sale and you have a \$10 coupon, does it make a difference which discount is applied first?
18. One-to-one relationships describe situations where people are matched with unique identifiers, such as their social security numbers. A function is a relation that matches x -values to y -values. What do you suppose a *one-to-one function* is?
19. In an orchestra, the principal player is chosen among all the other musicians that play a certain instrument to sit in the first chair and lead his section. In math, what do you suppose a *principal root* is?