

Get Ready!

Lesson 1-3

Evaluating Expressions

Evaluate each expression for $x = -2, 0$, and 2 .

1. 10^{x+1}

2. $\left(\frac{3}{2}\right)^x$

3. -5^{x-2}

4. $-(3)^{0.5x}$

Lesson 2-5

Using Linear Models

Draw a scatter plot and find the line of best fit for each set of data.

5. $(0, 2), (1, 4), (2, 6.5), (3, 8.5), (4, 10), (5, 12), (6, 14)$

6. $(3, 100), (5, 150), (7, 195), (9, 244), (11, 296), (13, 346), (15, 396)$

Lessons 4-1
and 5-9

Graphing Transformations

Identify the parent function of each equation. Graph each equation as a transformation of its parent function.

7. $y = (x + 5)^2 - 3$

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

Lesson 6-4

Simplifying Rational Exponents

Simplify each expression.

9. $(x^{\frac{1}{5}})^{10}$

10. $(-8x^3)^{\frac{4}{3}}$

Lesson 6-7

Finding Inverses

Find the inverse of each function. Is the inverse a function?

11. $y = 10 - 2x^2$

12. $y = (x + 4)^3 - 1$



Looking Ahead Vocabulary

- In advertising, the *decay factor* describes how an advertisement loses its effectiveness over time. In math, would you expect a decay factor to increase or decrease the value of y as x increases?
- There are many different kinds of growth patterns. Patterns that increase by a constant rate are linear. Patterns that grow *exponentially* increase by an ever-increasing rate. If your allowance doubles each week, does that represent linear growth or exponential growth?
- The word *asymptote* comes from a Greek word meaning "not falling together." When looking at the end behavior of a function, do you expect the graph to intersect its asymptote?