

## REVIEW KEY VOCABULARY

- exponential function, p. 478
- exponential growth function, p. 478
- growth factor, p. 478
- asymptote, p. 478
- exponential decay function, p. 486
- decay factor, p. 486
- natural base  $e$ , p. 492
- logarithm of  $y$  with base  $b$ , p. 499
- common logarithm, p. 500
- natural logarithm, p. 500
- exponential equation, p. 515
- logarithmic equation, p. 517

### VOCABULARY EXERCISES

1. What is the asymptote of the graph of the function  $y = -2\left(\frac{1}{4}\right)^{x+1} + 5$ ?
2. Identify the decay factor in the model  $y = 7.2(0.89)^x$ .
3. **WRITING** Explain the meaning of  $\log_b y$ .
4. Copy and complete: A logarithm with base  $e$  is called a(n)      logarithm.
5. Is  $y = (1.4)^x$  an exponential function or a power function? Explain.

## REVIEW EXAMPLES AND EXERCISES

Use the review examples and exercises below to check your understanding of the concepts you have learned in each lesson of Chapter 7.

### 7.1

## Graph Exponential Growth Functions

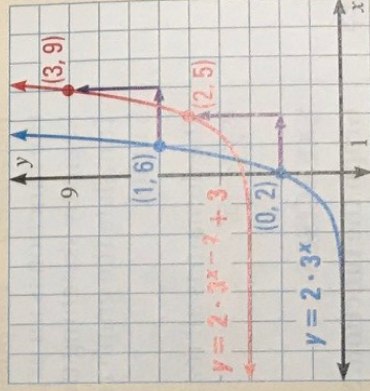
pp. 478–485

### EXAMPLE

Graph  $y = 2 \cdot 3^{x-2} + 3$ . State the domain and range.

Begin by sketching the graph of  $y = 2 \cdot 3^x$ , which passes through  $(0, 2)$  and  $(1, 6)$ . Then translate the graph right 2 units and up 3 units. Notice that the translated graph passes through  $(2, 5)$  and  $(3, 9)$ .

The graph's asymptote is the line  $y = 3$ . The domain is all real numbers, and the range is  $y > 3$ .



**EXAMPLES**  
1, 2, 3, and 5  
on pp. 478–481  
for Exs. 6–9

### EXERCISES

Graph the function. State the domain and range.

6.  $y = 5^x$
7.  $y = 3(2.5)^x$
8.  $f(x) = -3 \cdot 4^{x+1} - 2$
9. **FINANCE** You deposit \$1500 in an account that pays 7% annual interest compounded daily. Find the balance after 2 years.