

# 10.8 EXERCISES

## HOMEWORK KEY

- = **WORKED-OUT SOLUTIONS**  
on p. WS1 for Exs. 7, 13, and 25
- ✚ = **TAKS PRACTICE AND REASONING**  
Exs. 18, 26, 27, and 29
- ◆ = **MULTIPLE REPRESENTATIONS**  
Ex. 25

### SKILL PRACTICE

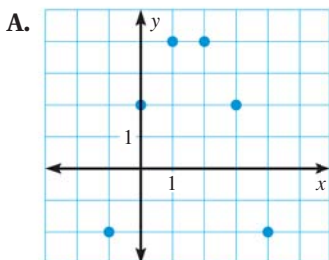
1. **VOCABULARY** Copy and complete: A function that is of the form  $y = ab^x$  is a(n)    ?
2. **WRITING** Describe how you can tell whether a table of values represents a quadratic function.

#### EXAMPLE 1

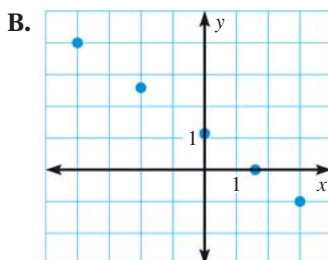
on p. 684  
for Exs. 3–11

**MATCHING** Match the function with the graph that the function represents.

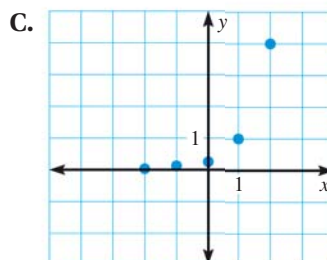
3. Linear function



4. Exponential function



5. Quadratic function



**USING A GRAPH** Use a graph to tell whether the ordered pairs represent a *linear function*, an *exponential function*, or a *quadratic function*.

6.  $(-4, -7), (-2, -1), (0, 1), (2, -1), (4, -7)$
7.  $(-5, -1), (-3, 0), (-1, 1), (1, 2), (3, 3)$
8.  $(-1, \frac{1}{16}), (0, \frac{1}{4}), (1, 1), (2, 4), (3, 16)$
9.  $(-1, 8), (1, 2), (3, \frac{1}{2}), (5, \frac{1}{8}), (7, \frac{1}{32})$
10.  $(-4, -4), (-2, -3.5), (0, -3), (2, -2.5)$
11.  $(-1, 0.5), (0, -0.5), (1, 0.5), (2, 3.5)$

#### EXAMPLES 2 and 3

on p. 685–686  
for Exs. 12–19

**USING DIFFERENCES AND RATIOS** Tell whether the table of values represents a *linear function*, an *exponential function*, or a *quadratic function*. Then write an equation for the function.

12. 

<b>x</b>	0	1	2	3	4
<b>y</b>	1	0	-1	-2	-3

13. 

<b>x</b>	-2	-1	0	1	2
<b>y</b>	-4	-1	0	-1	-4

14. 

<b>x</b>	-3	-2	-1	0	1
<b>y</b>	13.5	6	1.5	0	1.5

15. 

<b>x</b>	-2	-1	0	1	2
<b>y</b>	-5	-2	1	4	7

16. 

<b>x</b>	-2	-1	0	1	2
<b>y</b>	$\frac{1}{9}$	$\frac{1}{3}$	1	3	9

17. 

<b>x</b>	-1	0	1	2	3
<b>y</b>	16	4	1	$\frac{1}{4}$	$\frac{1}{16}$

18. ✚ **TAKS REASONING** Which function is represented by the following ordered pairs:  $(-1, 4), (0, 0), (1, 4), (2, 16), (3, 36)$ ?

- (A)  $y = 0.25x^2$       (B)  $y = 4^x$       (C)  $y = 4x^2$       (D)  $y = 4x$