Name _____ Date _____

LESSON 7.4

# Practice A

*For use with the lesson "Write and Graph Exponential Growth Functions"*

**Write a rule for the function.**

**1.**

| $x$ | $-1$ | 0 | 1 | 2 | 3 |
|---|---|---|---|---|---|
| $y$ | $\frac{1}{3}$ | 1 | 3 | 9 | 27 |

**2.**

| $x$ | $-1$ | 0 | 1 | 2 | 3 |
|---|---|---|---|---|---|
| $y$ | $\frac{1}{5}$ | 1 | 5 | 25 | 125 |

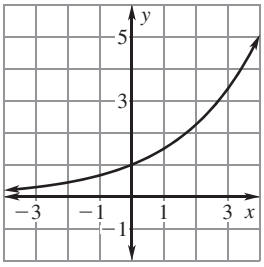
**Match the function with its graph.**

**3.** $y = 5^x$

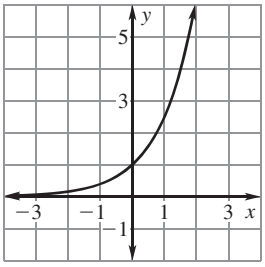
**4.** $y = (2.5)^x$

**5.** $y = (1.5)^x$

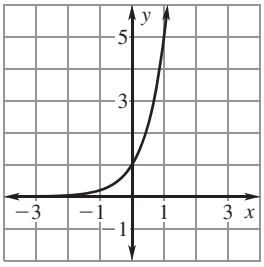
**A.**




**B.**

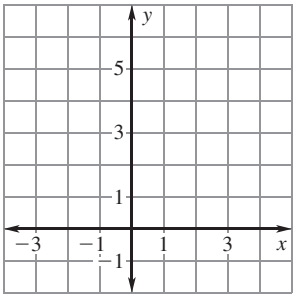



**C.**

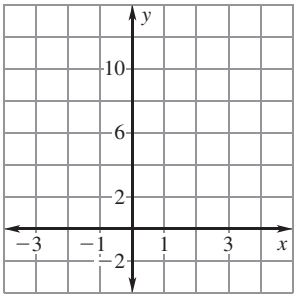



**Graph the function and identify its domain and range.**

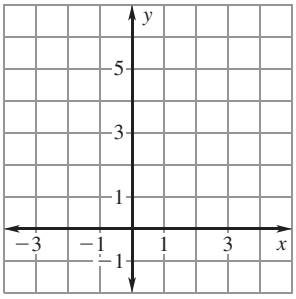
**6.** $y = 4^x$



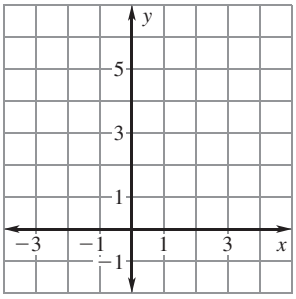

**7.** $y = 10^x$



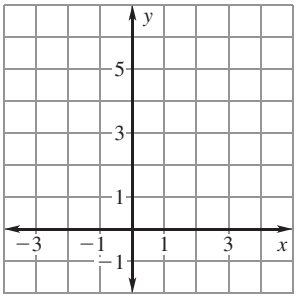

**8.** $y = 6^x$



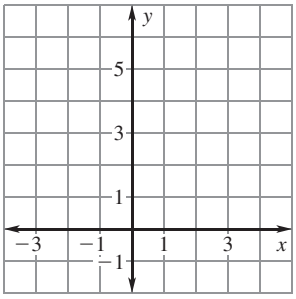

**9.** $y = (3.5)^x$




**10.** $y = (1.4)^x$




**11.** $y = (2.2)^x$



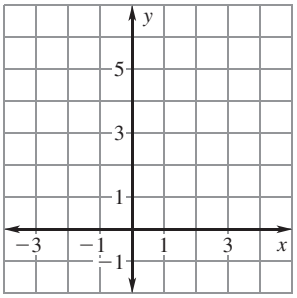
Name _____ Date _____

LESSON 7.4

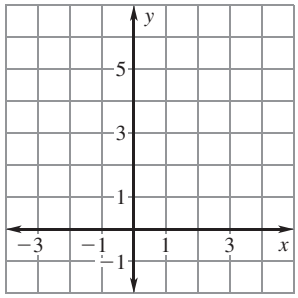
# Practice A *continued*

*For use with the lesson "Write and Graph Exponential Growth Functions"*

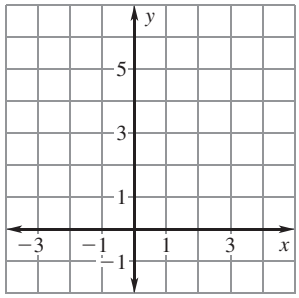
**12.** $y = \left(\frac{7}{3}\right)^x$




**13.** $y = \left(\frac{5}{2}\right)^x$

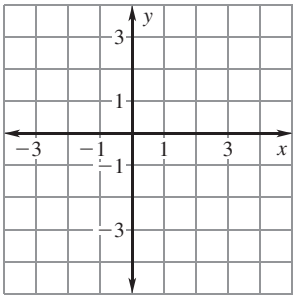



**14.** $y = \left(\frac{7}{4}\right)^x$

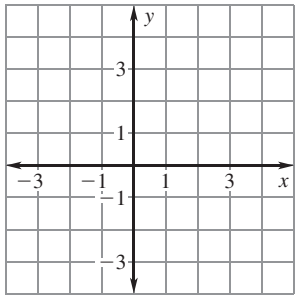



**Graph the function. Compare the graph with the graph of $y = 4^x$.**

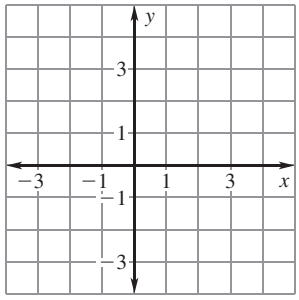
**15.** $y = -4^x$




**16.** $y = 3 \cdot 4^x$




**17.** $y = \frac{1}{4} \cdot 4^x$




**In the growth model, identify the growth rate, the growth factor, and the initial amount.**

**18.** $y = 3(1 + 0.05)^t$

**19.** $y = 2(1 + 0.25)^t$

**20.** $y = 0.1(1.75)^t$

**21.** **Investments** You deposit \$200 in a savings account that earns 3% interest compounded yearly. Find the balance in the account after the given amounts of time.

**a.** 1 year

**b.** 2 years

**c.** 5 years

**22.** **Grade Point Average** From Chad's freshman year to his senior year, his grade point average has increased by approximately the same percentage each year. Chad's grade point average in year $t$ can be modeled by

$$y = 2\left(\frac{5}{4}\right)^t$$

where $t = 0$ corresponds to Chad's freshman year. Complete the table showing Chad's grade point average throughout his high school career.

| **Year, *t*** | 0 | 1 | 2 | 3 |
|---|---|---|---|---|
| **Grade point average** | ? | ? | ? | ? |