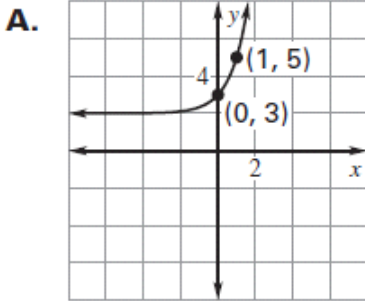


# LESSON 7.1 Practice

For use with pages 478-485

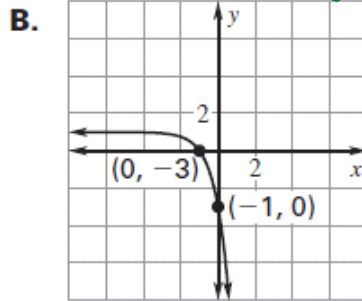
Match the function with its graph.

1.  $f(x) = \left(\frac{4}{3}\right)^x - 3$   $y = \left(\frac{4}{3}\right)^0 - 3$   
 $y = 1 - 3$



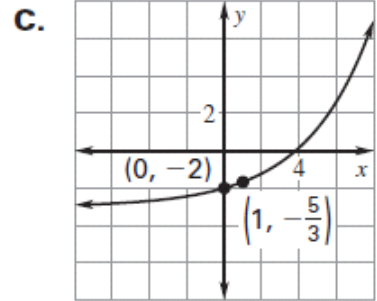
$y = -2$   
 $(0; 2)$

2.  $f(x) = 3^x + 2$   $y = 3^0 + 2$   
 $y = 1 + 2$



$y = 3$   
 $(0, 3)$

3.  $f(x) = -4^{x+1} + 1$



$y = -4^{0+1} + 1$   
 $y = -4 + 1$   
 $y = -3$   
 $(0, -3)$

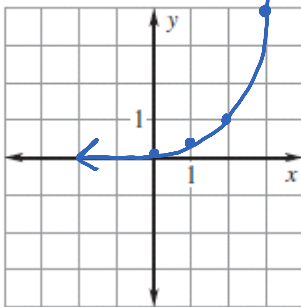
1. C

2. A

3. B

Graph the function. State the domain and range.

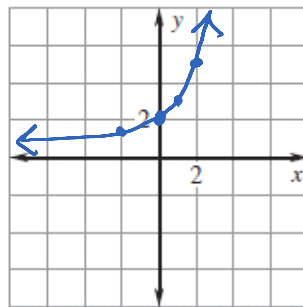
4.  $f(x) = 4^{x-2}$



x	y
1	$4^{1-2} = 4^{-1} = \frac{1}{4}$
2	$4^{2-2} = 4^0 = 1$
3	$4^{3-2} = 4^1 = 4$
4	$4^{4-2} = 4^2 = 16$

D:  $(-\infty, \infty)$   
R:  $(0, \infty)$

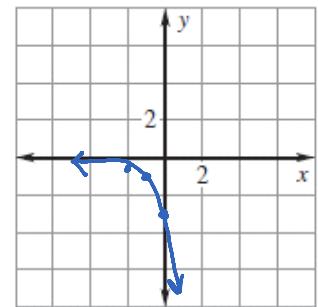
5.  $f(x) = 2^x + 1$



x	y
-1	$2^{-1} + 1 = 3/2$
0	$2^0 + 1 = 2$
1	$2^1 + 1 = 3$
2	$2^2 + 1 = 5$

D:  $(-\infty, \infty)$   
R:  $(1, \infty)$

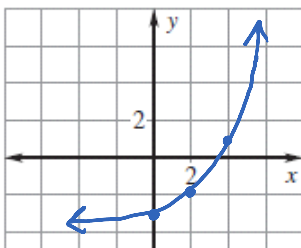
6.  $f(x) = -3^{x+1}$



x	y
-1	$-3^{-1+1} = -3^0 = -1$
0	$-3^{0+1} = -3^1 = -3$
1	$-3^{1+1} = -3^2 = -9$
2	$-3^{2+1} = -3^3 = -27$

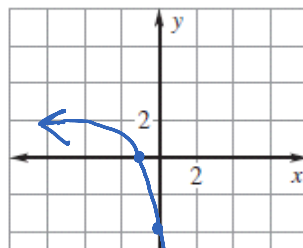
D:  $(-\infty, \infty)$   
R:  $(-\infty, 0)$

7.  $f(x) = 2^{x-2} - 3$



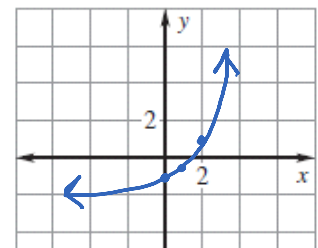
D:  $(-\infty, \infty)$   
R:  $(-3, \infty)$

8.  $f(x) = -2(3^{x+1}) + 2$

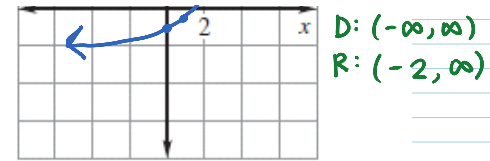
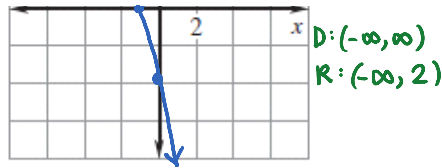
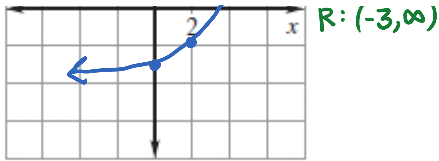


D:  $(-\infty, \infty)$   
R:  $(-\infty, 2)$

9.  $f(x) = \left(\frac{3}{2}\right)^x - 2$



D:  $(-\infty, \infty)$   
R:  $(-2, \infty)$



**In Exercises 10–12, use the following information.**

**Account Balance** You deposit \$3500 in an account that earns 2.5% annual interest. Find the balance after one year if the interest is compounded with the given frequency.

**10.** annually

$$y = 3500(1 + 0.025)^1$$

$$\boxed{\$3587.50}$$

**11.** quarterly

$$y = 3500\left(1 + \frac{0.025}{4}\right)^4$$

$$y = 3500(1.00625)^4$$

$$\boxed{\$3588.32}$$

**12.** monthly

$$y = 3500\left(1 + \frac{0.025}{12}\right)^{12}$$

$$y = 3500(1.002083)^{12}$$

$$\boxed{\$3588.51}$$

**In Exercises 13–15, use the following information.**

**Population** From 1990 to 2000, the population of California can be modeled by  $P = 29,816,591(1.0128)^t$  where  $t$  is the number of years since 1990.

**13.** What was the population in 1990?

$$29,816,591$$

**14.** What is the growth factor and annual percent increase?

$$\text{growth factor: } 1 - 1.0128 = .0128 = \boxed{1.28\%}$$

15. Estimate the population in 2007.  $t = 17$

$$\approx 37,013,552$$