

# 7-2 Practice

Form G

Complete ONLY exercises: 2, 6, 8, 11, 12, 13, 14, 17, 19, 20, 22, 25

Graph each function.

1.  $y = 2^x$

2.  $y = 5(0.12)^x$

3.  $y = 5^x$

4.  $y = -0.1(5)^x$

5.  $y = \left(\frac{1}{5}\right)^x$

6.  $y = -5\left(\frac{1}{3}\right)^x$

Graph each function as a transformation of its parent function.

7.  $y = 2^{x+1}$

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

9.  $y = 5^{-x}$

10.  $y = -0.1(5)^{-x}$

11.  $y = 2(2)^{x+2}$

12.  $y = 2^x + 1$

13. A cake is 190°F when you remove it from the oven. You must let it cool to 75°F before you can frost it. The table at the right shows the temperature readings for the cake.

a. Given a room temperature of 68°F, what is an exponential model for this data set?

b. How long must the cake cool before you can frost it?

Time (min)	Temp (°F)
0	190
5	149
10	122
15	104
20	92

Use the graph of  $y = e^x$  to evaluate each expression to four decimal places.

14.  $e^2$

15.  $e^{-2.5}$

16.  $e^{\frac{1}{3}}$

# 7-2 Practice (continued)

Form G

Find the amount in a continuously compounded account for the given conditions.

17. principal: \$5000  
 annual interest rate: 6.9%  
 time: 30 yr

18. principal: \$20,000  
 annual interest rate: 3.75%  
 time: 2 yr

19. How long would it take to double your principal at an annual interest rate of 7% compounded continuously?

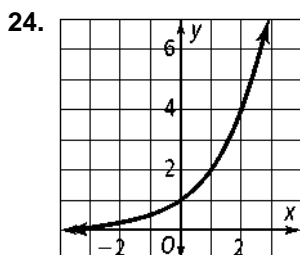
20. **Error Analysis** A student says that the graph of  $f(x) = 2^{x+3} + 4$  is a shift of 3 units up and 4 units to the right of the parent function. Describe and correct the student's error.

21. The isotope Hg-197 is used in kidney scans. It has a half-life of 64.128 h. After that time, half the isotope will have decayed. Write the exponential decay function for a 12-mg sample. Find the amount remaining after 72 h.

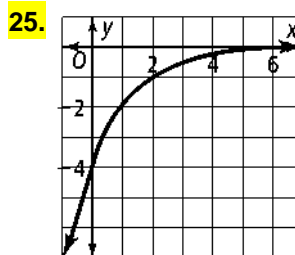
22. The isotope Sr-85 is used in bone scans. It has a half-life of 64.9 days. Write the exponential decay function for an 8-mg sample. Find the amount remaining after 100 days.

23. Suppose you invest \$2000 at an annual interest of 5.5% compounded continuously.  
 a. How much will you have in the account in 10 years?  
 b. How long will it take for the account to reach \$5000?

The parent function for each graph below is of the form  $y = ab^x$ . Write the parent function. Then write a function for the translation indicated.



translation: left 3 units, up 1 unit



translation: right 3 units, up 1 units