7-2 Practice

Form G

Properties of Exponential Functions

Graph each function.

1. $y = 2^x$

3. $y = 5^x$

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

Graph each function as a transformation of its parent function.

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

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

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

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?

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

15. $e^{-2.5}$

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

7-2 **Practice** (continued)   *Form G*

Properties of Exponential Functions

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

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

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

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.

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.

25.
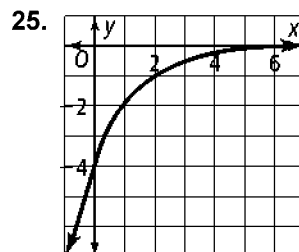
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