Name_____ Date _____

6.1 Practice A

In Exercises 1–3, evaluate the expression for (a) $x = -2$ and (b) $x = 3$.

1. 3^x **2.** $5 \bullet 2^x$ **3.** $3 + 2^x$

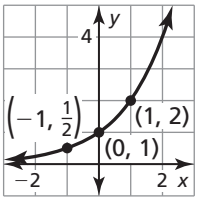
In Exercises 4–9, tell whether the function represents *exponential growth* or *exponential decay*. Then graph the function.

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

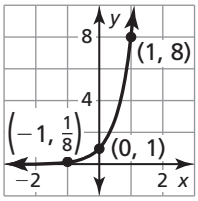
7. $y = \left(\frac{3}{2}\right)^x$ **8.** $y = (1.6)^x$ **9.** $y = (0.5)^x$

In Exercises 10 and 11, use the graph of $f(x) = b^x$ to identify the value of the base b.

10.



11.



12. The value of a rare coin y (in dollars) can be approximated by the model $y = 0.25(1.06)^t$, where t is the number of years since the coin was minted.

a. Tell whether the model represents exponential growth or exponential decay.

b. Identify the annual percent increase or decrease in the value of the coin.

c. What was the original value of the coin?

d. Estimate when the value of the coin will be \$0.60.

In Exercises 13–15, rewrite the function in the form $y = a(1 + r)^t$ or $y = a(1 - r)^t$. Then state the growth or decay rate.

13. $y = a(3)^{t/2}$ **14.** $y = a(5)^{t/8}$ **15.** $y = a(0.4)^{3t}$

16. You deposit \$3000 into a bank account that pays 1.25% annual interest, compounded semi-annually. How much interest does the account earn after 4 years?

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