



**Investing** Investments often grow exponentially. In Exercises 13–18, use exponential growth rates. (See Examples 5 and 6.)

13. You open a savings account and deposit \$1250.00. One year later, the balance in the account is \$1262.50. No other transactions were posted to the account. What is the annual rate of growth for the savings account?
14. You open a savings account and deposit \$4200.00. One month later, the balance in the account is \$4208.40. No other transactions were posted to the account. What is the monthly rate of growth for the savings account?
15. You buy 50 shares of stock for \$18.25 per share. One month later, the value of the stock is \$18.98 per share.
  - a. The value of the stock continues to increase by the same dollar amount each month. How much will your investment be worth in 1 year?
  - b. The value of the stock continues to increase by the same percent each month. How much will your investment be worth in 1 year?
16. You buy 65 shares of stock for \$12.00 per share. One month later, the value of the stock is \$12.78 per share.
  - a. The value of the stock continues to increase by the same dollar amount each month. How much will your investment be worth in 3 years?
  - b. The value of the stock continues to increase by the same percent each month. How much will your investment be worth in 3 years?
17. During the first year of operation, a company makes a profit of \$40,000. During the third year of operation, the company makes a profit of \$120,000. Estimate its annual rate of growth.
18. You buy a coin collection for \$10,000. Two years later, you sell the coin collection for \$12,500. Estimate its annual rate of growth.



**19. Mathematical Models** Mathematical models rarely match real-life data perfectly. In general, a model will give an approximate value for each input. The table shows the balances of an investment account at the end of six continuous years. Would the data in the table be better represented by a linear growth model or an exponential growth model? Explain your reasoning.

Year	2006	2007	2008	2009	2010	2011
Balance	\$11,503	\$12,348	\$13,335	\$14,293	\$15,024	\$15,841

20. **Risk Aversion** Investing in the stock market can be nerve-racking due to the uncertainty of how a stock will perform. A risk-averse investor might put money in bonds or a savings account with a low but guaranteed interest rate. How would you invest a \$10,000 windfall? Explain your reasoning.

