

Find the growth rate associated with the given growth factor.

10. 1.4

11. 1.9

12. 1.75

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For: Multiple-Choice Skills
Practice

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For Exercises 13–15, find the growth factor associated with the given growth rate.

13. 45%

14. 90%

15. 31%

16. Suppose the price of an item increases by 25% per year. What is the growth factor for the price from year to year?

17. Currently, 1,000 students attend Greenville Middle School. The school can accommodate 1,300 students. The school board estimates that the student population will grow by 5% per year for the next several years.

- In how many years will the population outgrow the present building?
- Suppose the school limits its growth to 50 students per year. How many years will it take for the population to outgrow the school?



18. Suppose that, for several years, the number of radios sold in the United States increased by 3% each year.

- Suppose one million radios sold in the first year of this time period. About how many radios sold in each of the next 6 years?
- Suppose only 100,000 radios sold in the first year. About how many radios sold in each of the next 6 years?

19. Suppose a movie ticket costs about \$7, and inflation causes ticket prices to increase by 4.5% a year for the next several years.

- At this rate, how much will a ticket cost 5 years from now?
- How much will a ticket cost 10 years from now?
- How much will a ticket cost 30 years from now?

20. Find the growth rate (percent growth) for a relationship with the equation $y = 30(2^x)$.
21. **Multiple Choice** Ms. Diaz wants to invest \$500 in a savings bond. At which bank would her investment grow the most over 8 years?
- F. Bank 1: 7% interest for 8 years.
- G. Bank 2: 2% interest for the first 4 years and 12% interest for the next four years.
- H. Bank 3: 12% interest for the first 4 years and 2% interest for the next four years.
- J. All three result in the same growth.

22. Oscar made the following calculation to predict the value of his baseball card collection several years from now:

$$\text{Value} = \$130 \times 1.07 \times 1.07 \times 1.07 \times 1.07 \times 1.07$$

- a. What initial value, growth rate, growth factor, and number of years is Oscar assuming?
- b. If the value continues to increase at this rate, how much would the collection be worth in three more years?
23. Carlos, Latanya, and Mila work in a biology laboratory. Each of them is responsible for a population of mice.
- The growth factor for Carlos's population of mice is $\frac{8}{7}$.
 - The growth factor for Latanya's population of mice is 3.
 - The growth factor for Mila's population of mice is 125%.
- a. Whose mice are reproducing fastest?
- b. Whose mice are reproducing slowest?

