

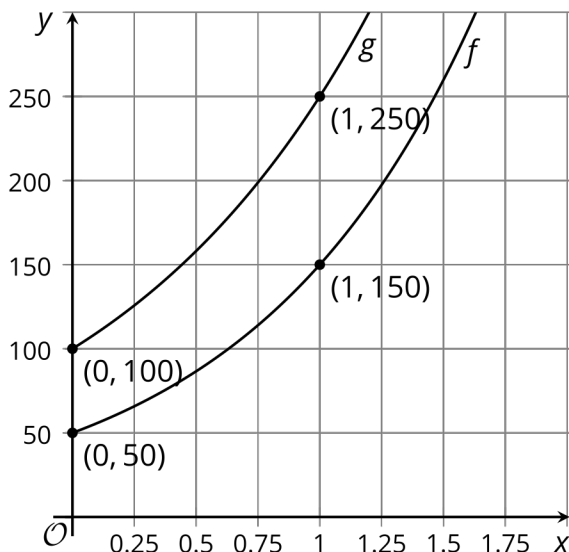
4.8 Exam: Exponential Functions and Equations Check Your Readiness

1. For which function k does the output increase by 20% every time the input increases by 1?
 - a. $k(x) = 0.020^x$
 - b. $k(x) = 0.20^x$
 - c. $k(x) = 1.20^x$
 - d. $k(x) = 20^x$
2. The value of a stock in 1940 is \$1.25. Its value grows by 7% each year after 1940.
 - a. Write an equation representing the value of the stock $V(t)$, in dollars, t years after 1940.
 - b. What does $V(50)$ represent in this situation?
3. The table shows the area $A(n)$, in square centimeters, of a piece of paper after it is folded in half n times.

n	$A(n)$
1	140
2	70
3	35
4	17.5

- a. What is the area of the sheet of paper?
- b. Write an equation expressing the area A as a function of the number of folds n .

4. Here are the graphs of two different exponential functions, f and g .



- a. By what factor do the values of f grow when the input increases by 1? By 10?
 - b. By what factor do the values of g grow when the input increases by 1? By 10?
5. \$2,000 is deposited in a bank account and no further deposits or withdrawals are made. The account receives 6% annual interest compounded monthly. Which expressions represent the account balance, in dollars, after 5 years?
- a. $2,000 \cdot (1.06)^5$
 - b. $2,000 \cdot \left(1 + \frac{6}{12}\right)^5$
 - c. $2,000 \cdot \left(\left(1 + \frac{0.06}{12}\right)^{12}\right)^5$
 - d. $2,000 \cdot \left(1 + \frac{0.06}{12}\right)^{60}$
 - e. $2,000 \cdot \left(1 + \frac{0.06}{12}\right)^5$

6. The value of a particular used car has been decreasing at the same rate each year since 2010. The equation $C(t) = 25,000 \cdot (0.78)^t$ represents the value of the car $C(t)$, in dollars, as a function of t , the number of years since 2010.
- What do the numbers 25,000 and 0.78 tell us about this situation?
 - What is the percent decrease of the value of the car each year?
 - Sketch a graph of C .

