

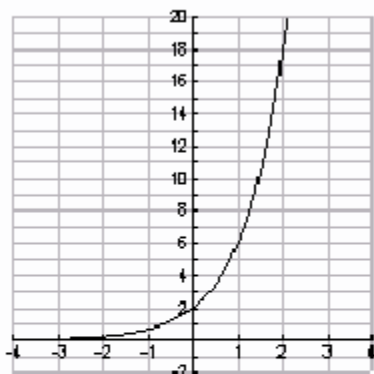


Name \_\_\_\_\_

Date \_\_\_\_\_ Pd. \_\_\_\_\_

### Exit Card: Growth and Decay Continued

Look at the graph below .



Which exponential function is represented by this graph?

- A.  $f(x) = 2^x$       B.  $f(x) = 3^x$       C.  $f(x) = 2(3)^x$       D.  $f(x) = 3(2)^x$

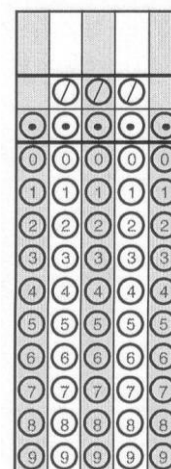
Which of the following statements is **NOT** true about both  $f(x) = 5^x$  and  $g(x) = 3(5)^x$  ?

- A. Both functions have the same domain.  
 B. Both functions have the same range.  
 C. Both functions have the same asymptote.  
 D. Both functions have the same  $y$ -intercept.

John invested \$300 in the bank. The money earns interest at a rate of 6% per year compounded quarterly. How much will John have in 7 years? Round your answer to the nearest dollar.

Use the interest formula,  $A = P\left(1 + \frac{r}{n}\right)^{nt}$ , where

- $P$  = initial balance,
- $r$  = annual rate of interest,
- $n$  = number of times the interest is compounded each year,
- $t$  = number of years the money is invested,
- $A$  = the current value of the investment.



Name \_\_\_\_\_

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**Homework: Pages 564 – 565 (20 – 22, 31, 32, 36, 45)**

20. A new car costs \$23,000. It is expected to depreciate 12% each year. Find the value of the car in 5 years.

Since birth rates are going down and people are living longer, the percent of the population that is 65 year old or older continues to rise. The percent of the U.S. population  $P$  that is at least 65 years old can be approximated by the equation  $P = 3.86(1.013)^t$ , where  $t$  represents the number of years since 1900.

21. What percent of the population will be 65 years of age or older in the year 2010?
22. Predict the year in which people ages 65 or older will represent 20% of the population if this trend continues (Use a table).

31. Which equation represents exponential growth?

A  $y = 50x^3$

B  $y = 30x^2 + 10$

C  $y = 35(1.05^x)$

D  $y = 80(0.92^x)$

32. Lorena is investing a \$5000 inheritance from her aunt in a certificate of deposit that matures in 4 years. The interest rate is 8.25% compounded quarterly. What is the balance of the account after 4 years?

- A \$5,412.50      B \$6,865.65      C \$6,908.92      D \$6931.53

36. Solve  $m^2 - 9m - 10 = 0$  using the quadratic formula.

45. A course for cross-country skiing is regulated so that the slope of any hill cannot be greater than 0.33. A hill rises 60 meters over a horizontal distance of 250 meters. Does the hill meet the requirements?