

## Exponential Functions

Solve the problem.

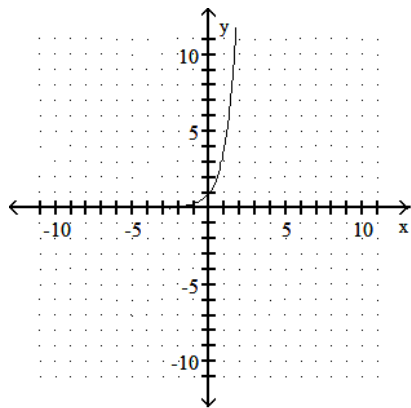
- 1) The rabbit population in a forest area grows at the rate of 4% monthly. If there are 160 rabbits in April, find how many rabbits (rounded to the nearest whole number) should be expected by next April. Use  $y = 160(2.7)^{0.04t}$ . 1) \_\_\_\_\_  
 A) 245 B) 271 C) 258 D) 207
- 2) The population in a particular country is growing at the rate of 2.6% per year. If 10,184,000 people lived there in 1999, how many will there be in the year 2,007? Use  $f(x) = y_0 e^{0.026t}$  and round to the nearest ten-thousand. 2) \_\_\_\_\_  
 A) 15,050,000 B) 13,790,000 C) 12,290,000 D) 12,540,000
- 3) The function  $D(h) = 5e^{-0.4h}$  can be used to determine the milligrams  $D$  of a certain drug in a patient's bloodstream  $h$  hours after the drug has been given. How many milligrams (to two decimals) will be present after 6 hours? 3) \_\_\_\_\_  
 A) 0.45 mg B) 0.81 mg C) 3.78 mg D) 55.12 mg

Graph the function by making a table of coordinates.

- 4)  $f(x) = 2^x$  4) \_\_\_\_\_
- 5)  $f(x) = \left(\frac{3}{5}\right)^x$  5) \_\_\_\_\_
- 6)  $f(x) = 0.9^x$  6) \_\_\_\_\_

The graph of an exponential function is given. Select the function for the graph from the functions listed.

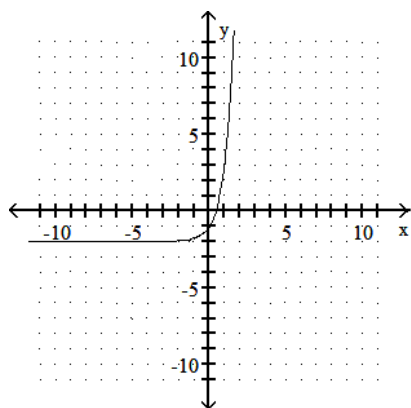
- 7) 7) \_\_\_\_\_



- A)  $f(x) = 4^x + 1$  B)  $f(x) = 4^x - 1$  C)  $f(x) = 4^x$  D)  $f(x) = 4^x + 1$

8)

8) \_\_\_\_\_



A)  $f(x) = 5^x - 2$

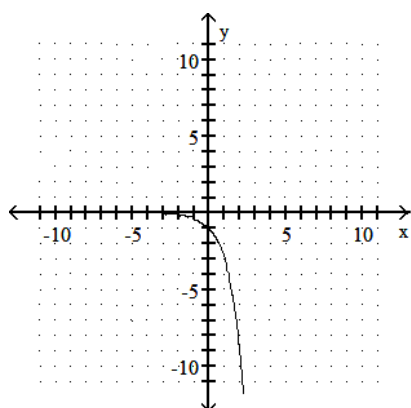
B)  $f(x) = 5^x - 2$

C)  $f(x) = 5^x$

D)  $f(x) = 5^x + 2$

9)

9) \_\_\_\_\_



A)  $f(x) = 3^x$

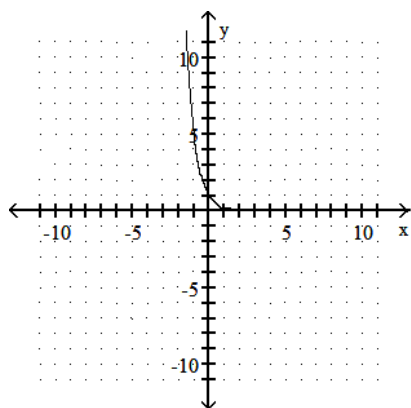
B)  $f(x) = -3^{-x}$

C)  $f(x) = -3^x$

D)  $f(x) = 3^{-x}$

10)

10) \_\_\_\_\_



A)  $f(x) = -5^x$

B)  $f(x) = -5^{-x}$

C)  $f(x) = 5^x$

D)  $f(x) = 5^{-x}$

Graph the function.

11) Use the graph of  $f(x) = 5^x$  to obtain the graph of  $g(x) = 5^x - 2 + 1$ .

11) \_\_\_\_\_

Answer Key

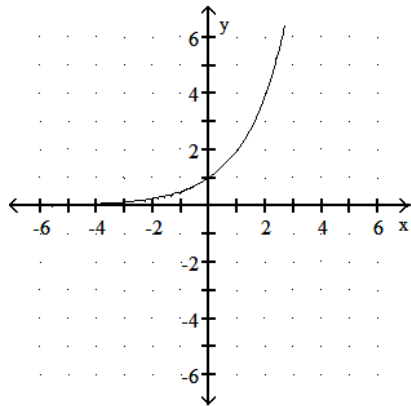
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1) C

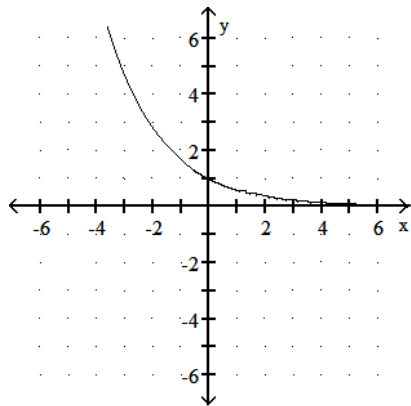
2) D

3) A

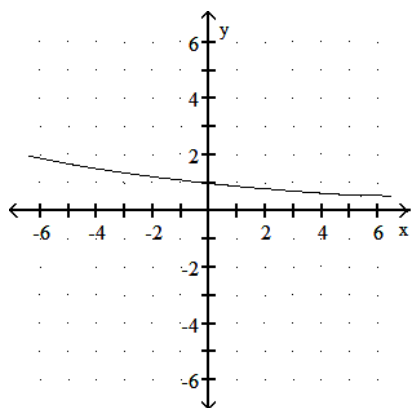
4)



5)



6)



7) C

8) A

9) C

10) D

Answer Key

Testname: 24\_EXPONENTIAL FUNCTIONS

11)

