

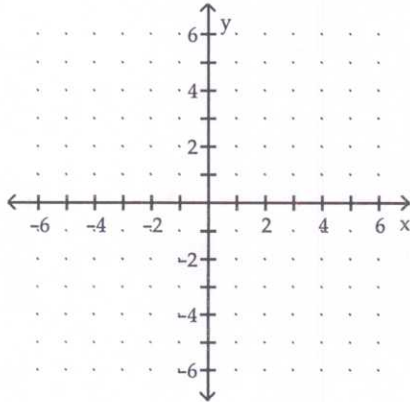
Name \_\_\_\_\_

SELECT THE CORRECT ANSWER

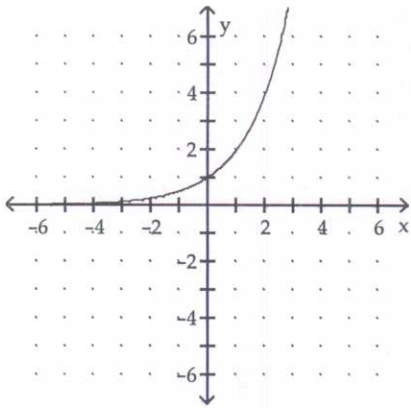
**MULTIPLE CHOICE.** Choose the one alternative that best completes the statement or answers the question.

**Graph the function.**

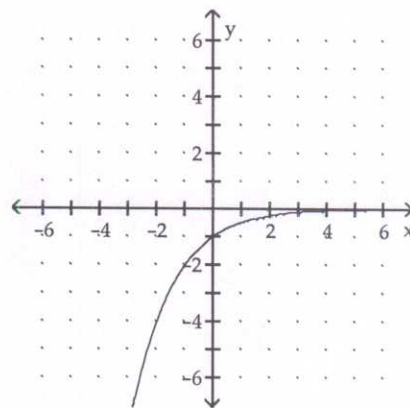
- 1) Use the graph of  $f(x) = 2^x$  to obtain the graph of  $g(x) = -2^x$ .



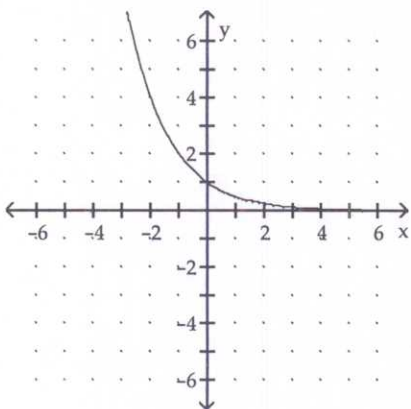
A)



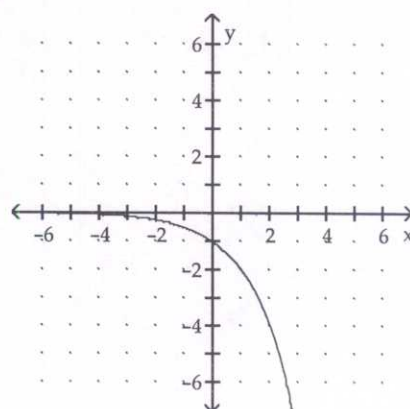
B)



C)



D)



Use the compound interest formulas  $A = P\left(1 + \frac{r}{n}\right)^{nt}$  and  $A = Pert$  to solve.

2) Find the accumulated value of an investment of \$1500 at 14% compounded quarterly for 2 years.

A) \$1920.00

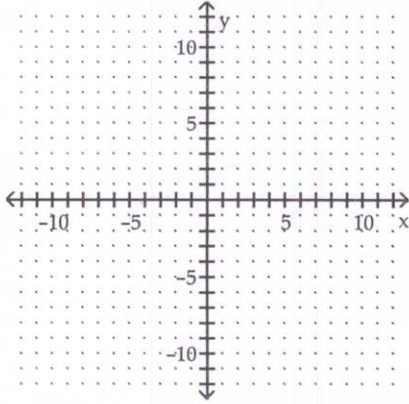
B) \$1975.21

C) \$1606.84

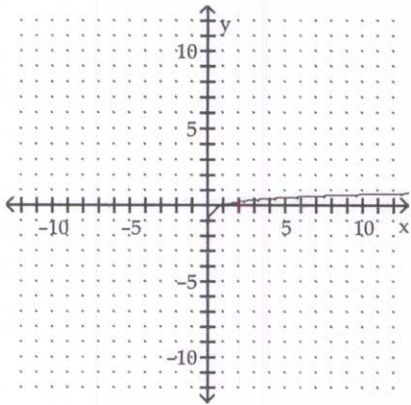
D) \$1949.40

Graph the function.

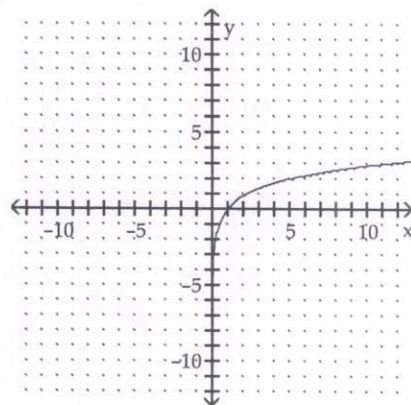
3) Use the graph of  $\log_5 x$  to obtain the graph of  $f(x) = \frac{1}{2} \log_5 x$ .



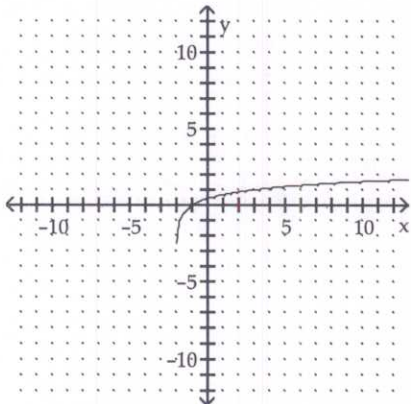
A)



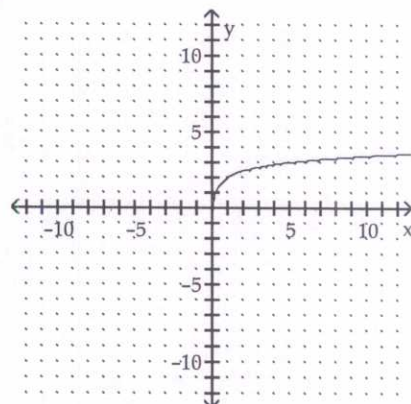
B)



C)



D)



Find the domain of the logarithmic function.

4)  $f(x) = \log_2 (x - 2)^2$

A)  $(-\infty, 0)$  or  $(0, \infty)$

B)  $(2, \infty)$

C)  $(-2, \infty)$

D)  $(-\infty, 2)$  or  $(2, \infty)$

Evaluate the expression without using a calculator.

5)  $\log_2 2$

A)  $\frac{1}{2}$

B) 0

C) 1

D) 2

Use properties of logarithms to condense the logarithmic expression. Write the expression as a single logarithm whose coefficient is 1. Where possible, evaluate logarithmic expressions.

6)  $4 \log_b m - \log_b n$

A)  $\log_b m^4 \div \log_b n$

B)  $\log_b \left( \frac{m^4}{n} \right)$

C)  $\log_b \left( \frac{4m}{n} \right)$

D)  $\log_b (m^4 - n)$

Use common logarithms or natural logarithms and a calculator to evaluate to four decimal places

7)  $\log_4 20$

A) 0.4628

B) 2.1610

C) 1.9031

D) 0.6990

Solve the exponential equation. Use a calculator to obtain a decimal approximation, correct to two decimal places, for the solution.

8)  $4^{x+7} = 2$

A) -1.15

B) -6.50

C) 2.85

D) 9.00

Solve the equation by isolating the natural logarithm and exponentiating both sides. Express the answer in terms of e.

9)  $\ln x = 3$

A)  $\{3e\}$

B)  $\{\ln 3\}$

C)  $\left\{ \frac{3}{\ln 1} \right\}$

D)  $\{e^3\}$

Solve the problem.

- 10) The value of a particular investment follows a pattern of exponential growth. In the year 2000, you invested money in a money market account. The value of your investment  $t$  years after 2000 is given by the exponential growth model  $A = 1700e^{0.064t}$ . How much did you initially invest in the account?

A) \$108.80

B) \$850.00

C) \$1812.36

D) \$1700.00