08 - Lesson 7, Exam 8

Part 1 of 1 - 30.0/ 100.0 Points

Question 1 of 20 5.0/ 5.0 Points

Write the expression as a single logarithm

$7\log_b y + 6\log_b x$

○ A. $\log_b\left(yx^{7+6}\right)$

○ B. $(7+6)\log_b(y+x)$

◉ C. $\log_b(y^7x^6)$

○ D. $\log_b\left(y^7+x^6\right)$

Question 2 of 20 5.0/ 5.0 Points

Write the equation in exponential form.

$\log_4 \frac{1}{16} = -2$

○ A. $4^{\frac{1}{2}} = 16$

○ B. $4^2 = 16$

○ C. $16^{\frac{1}{2}} = 4$

◉ D. $4^{-2} = \frac{1}{16}$

Question 3 of 20 5.0/ 5.0 Points

Use the graph of $y = e^x$ to evaluate $e^{1.7}$ to four decimal places.

- (●) A. 5.4739
- ( ) B. 4.6211
- ( ) C. 2.7183
- ( ) D. 0.1827

Question 4 of 20 0.0/ 5.0 Points

Expand the logarithmic expression.

$\log_3 \frac{d}{12}$

- ( ) A. $\log_3 d - \log_3 12$
- (●) B. $\frac{\log_3 d}{\log_3 12}$
- ( ) C. $-d\log_3 12$
- ( ) D. $\log_3 12 - \log_3 d$

Question 5 of 20 0.0/ 5.0 Points

Write the expression as a single natural logarithm.

$3 \ln x - 2 \ln c$

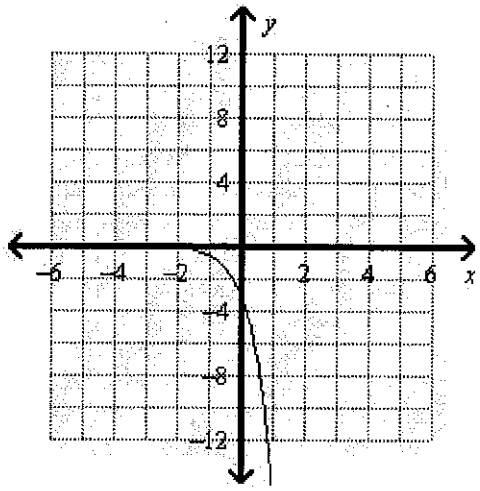
- ( ) A. $\ln \frac{x^3}{c^2}$
- (●) B. $\ln(x^3 + c^2)$
- ( ) C. $\ln(x^3 - c^2)$
- ( ) D. $\ln x^3 c^2$

Question 6 of 20 0.0/ 5.0 Points

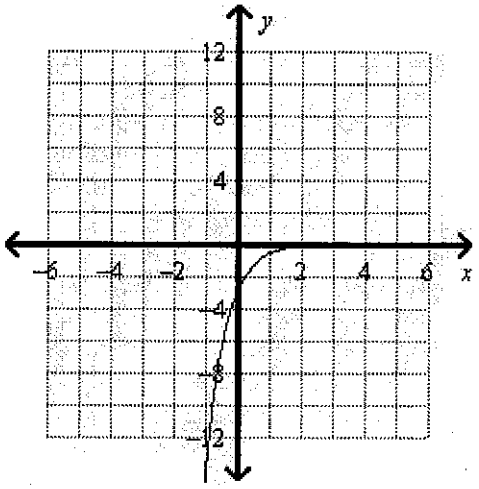
Graph the function.

$y = \frac{1}{5}(3)^x$

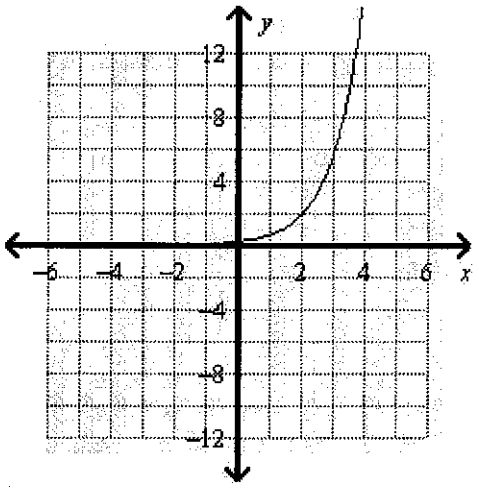
○ A.

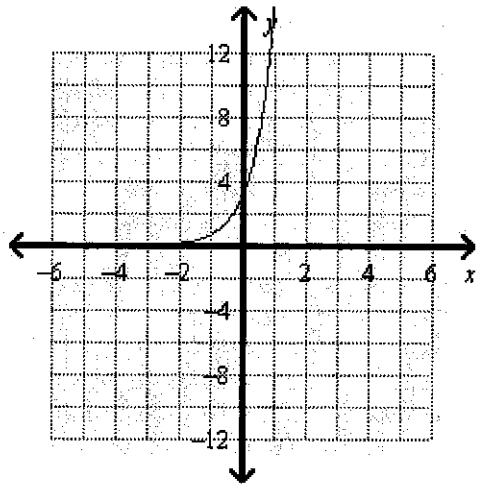


◉ B.



○ C.





○ D.

Question 7 of 20 0.0/ 5.0 Points

Write the expression as a single logarithm.

$3\log_b q + 6\log_b v$

○ A. $\log_b(q^3 v^6)$

○ B. $(3 + 6)\log_b(q + v)$

◉ C. $\log_b(q v^{3+6})$

○ D. $\log_b(q^3 + v^6)$

Question 8 of 20 0.0/ 5.0 Points

Write the expression as a single natural logarithm.

$3\ln 3 + 3\ln c$

◉ A. $\ln(27 + c^3)$

○ B. $\ln 9c^3$

○ C. $\ln 27c$

○ D. $\ln 27c^3$

Question 9 of 20 5.0/ 5.0 Points

Use natural logarithms to solve the equation. Round to the nearest thousandth.

$6e^{4x} - 2 = 3$

○ A. −0.448

○ B. 0.327

○ C. 0.067

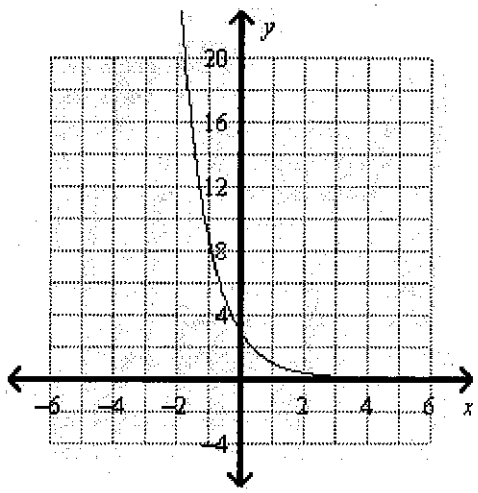
◉ D. –0.046

Question 10 of 20 5.0/ 5.0 Points

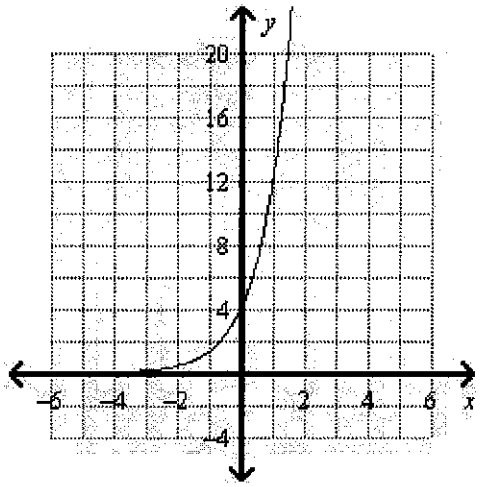
Graph the exponential function.

$y = 4(3)^x$

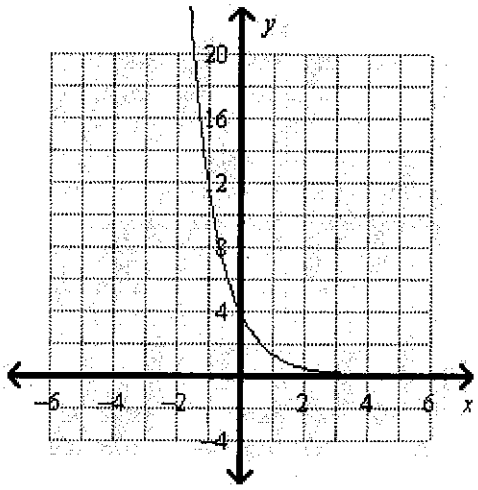
○ A.



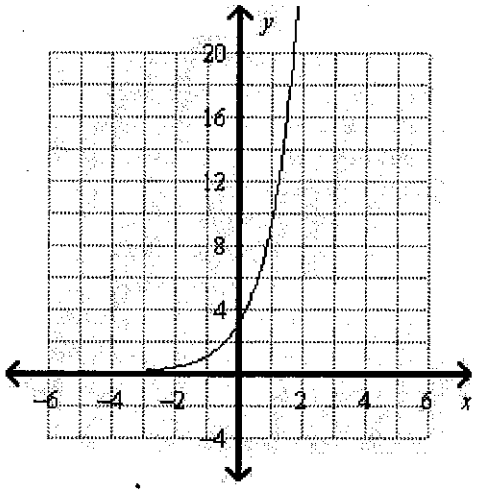
◉ B.



○ C.



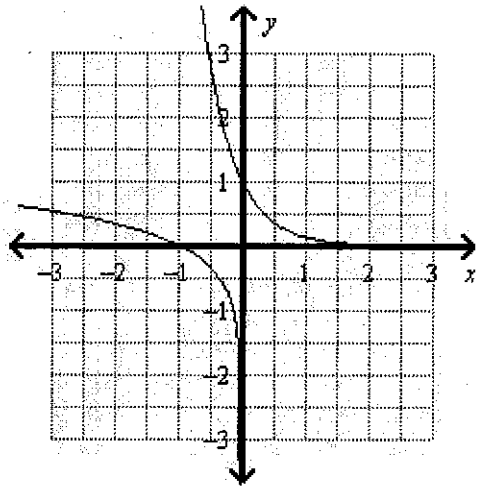
○ D.



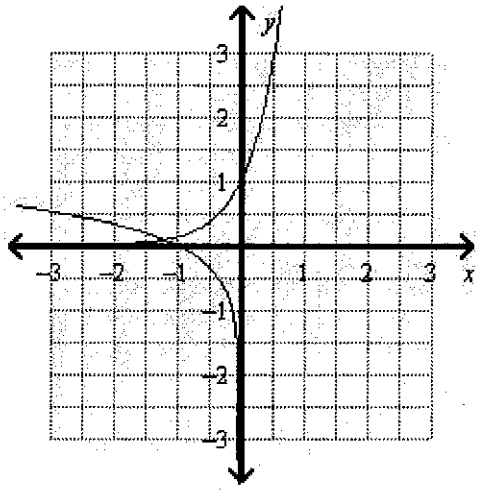
Question 11 of 20 0.0/ 5.0 Points

Graph $y = \log_8 x$ and its inverse.

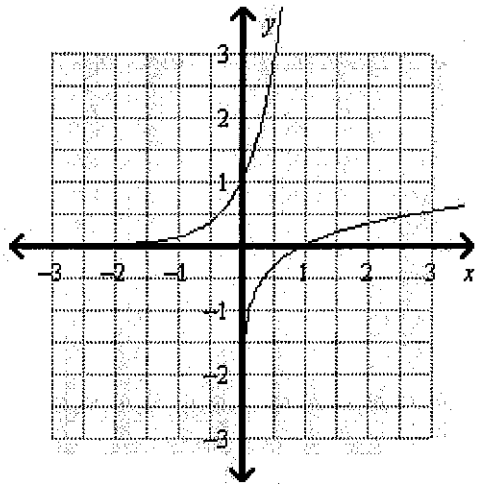
○ A.

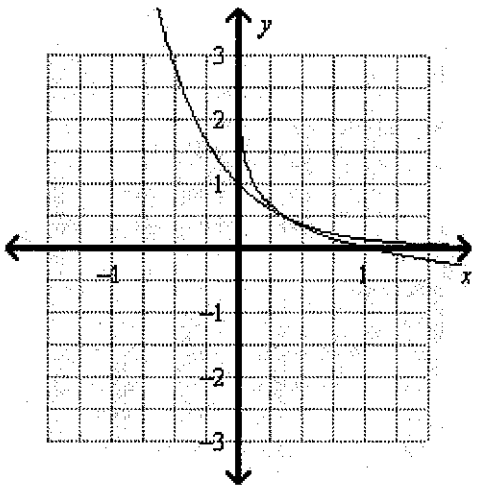


◉ B.



○ C.



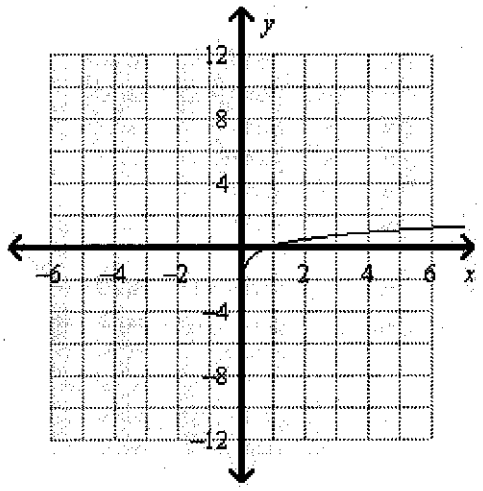


○ D.

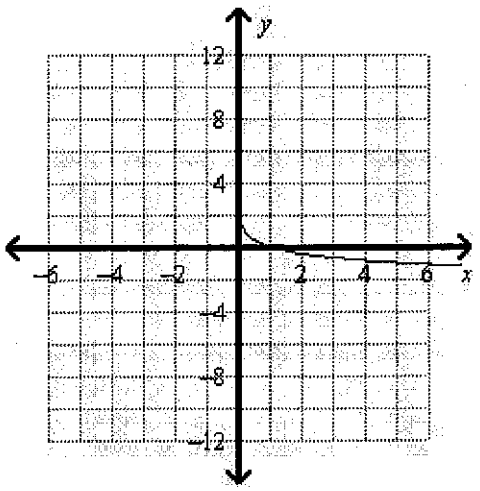
Question 12 of 20 0.0/ 5.0 Points

Graph the logarithmic equation.

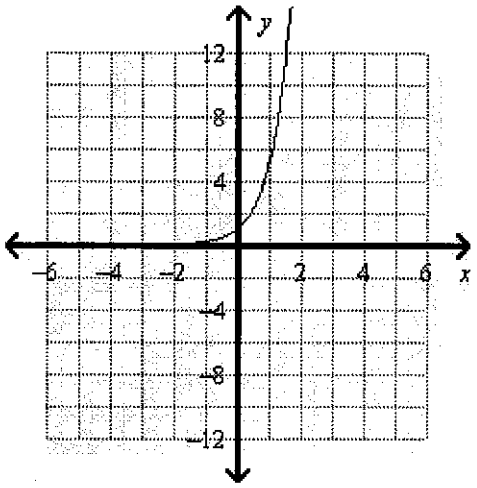
$y = \log_5 x$



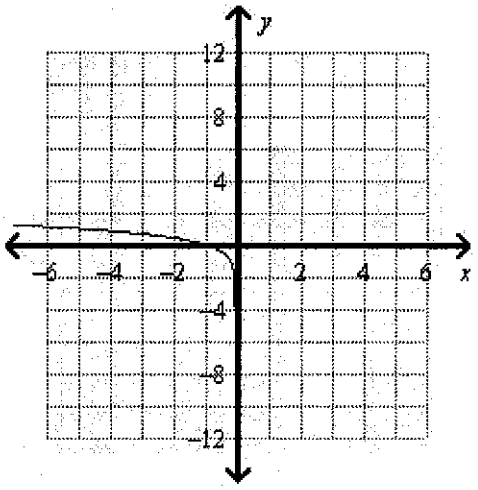
○ A.



○ B.



◉ C.

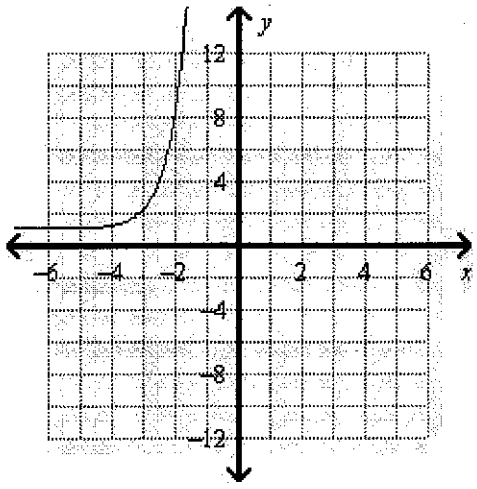


○ D.

Question 13 of 20 0.0/ 5.0 Points

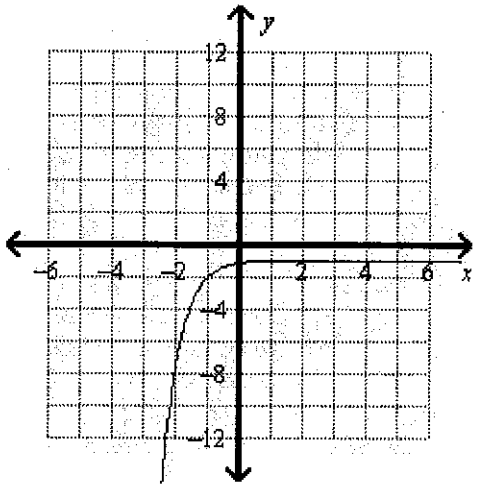
Graph the function.

$y = 7(6)^{x+2} + 1$

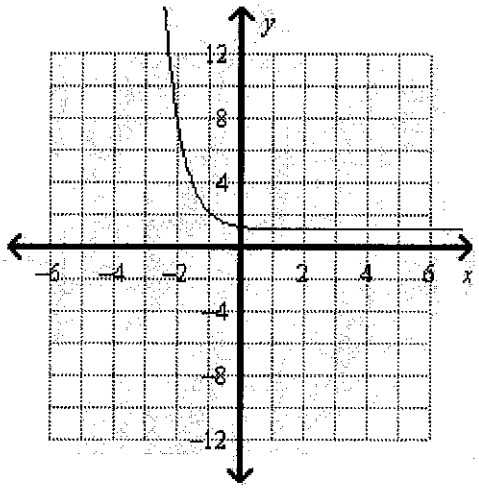


○ A.

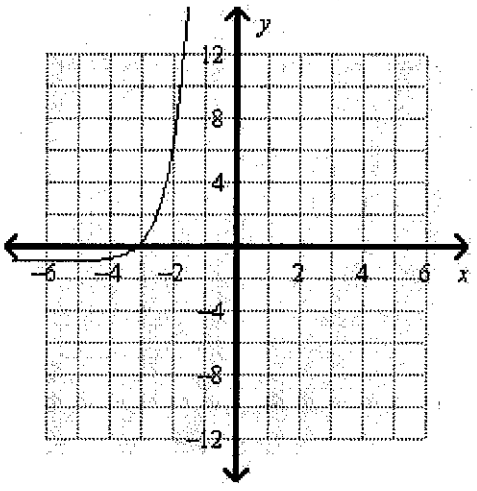
◉ B.



○ C.



○ D.



Question 14 of 20 0.0/ 5.0 Points

Write the equation in logarithmic form.

$2^5 = 32$

○ A. $\log 32 = 5 \cdot 2$

○ B. $\log_2 32 = 5$

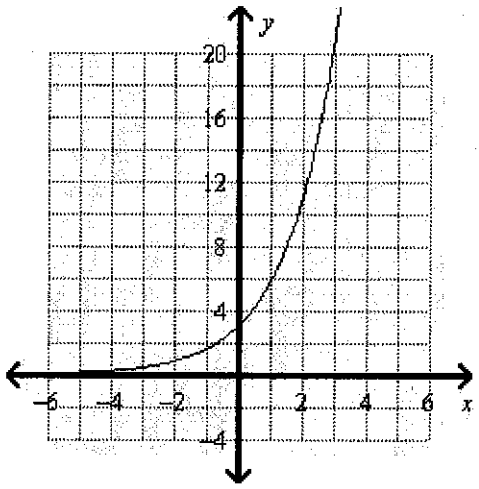
◉ C. $\log 32 = 5$

○ D. $\log_5 32 = 2$

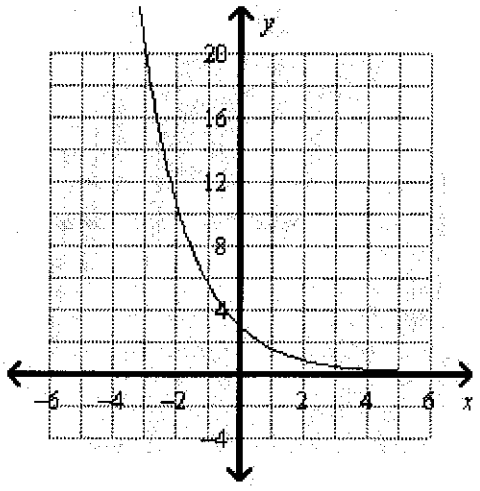
Question 15 of 20 0.0/ 5.0 Points

Graph the exponential function.

$y = 3(1.9)^x$

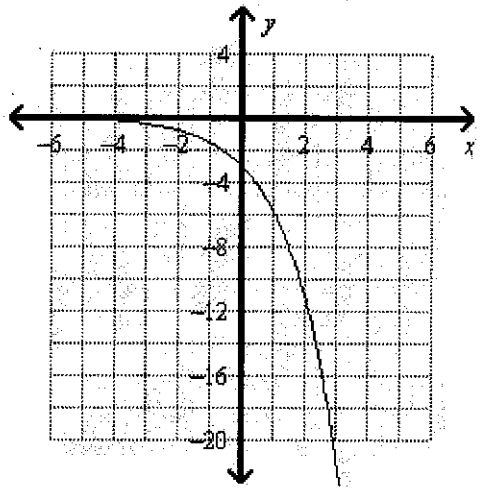


○ A.

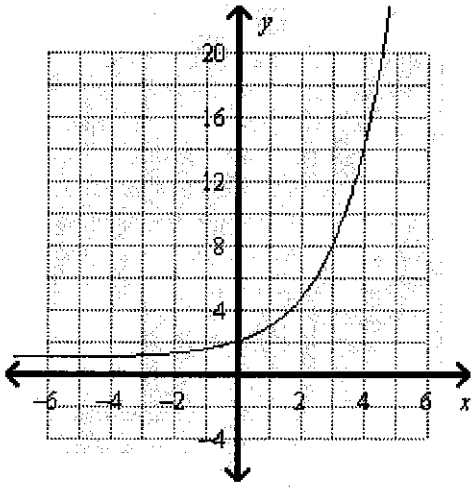


◉ B.

○ C.



○ D.



Question 16 of 20 0.0/ 5.0 Points

Write the equation is logarithmic form

$3^3 = 27$

○ A.

log 27 = 3

◉ B.

$\log_3 27 = 27$

○ C.

$\log_3 27 = 3$

○ D.

log 27 = 3 · 3

Question 17 of 20 0.0/ 5.0 Points

Evaluate the logarithm

$\log_5 25$

- ○ A. 1
- ◉ B. -2
- ○ C. 5
- ○ D. 2

Question 18 of 20 5.0/ 5.0 Points

The half-life of a certain radioactive material is 71 hours. An initial amount of the material has a mass of 722 kg. Write an exponential function that models the decay of this material. Find how much radioactive material remains after 17 hours. Round your answer to the nearest thousandth.

$$y = \frac{1}{2}\left(\frac{1}{722}\right)^{\frac{1}{71}x}$$

- ○ A. ; 0.103 kg

$$y = 722\left(\frac{1}{2}\right)^{\frac{1}{71}x}$$

- ◉ B. ; 611.589 kg

$$y = 2\left(\frac{1}{722}\right)^{\frac{1}{71}x}$$

- ○ C. ; 0.414 kg

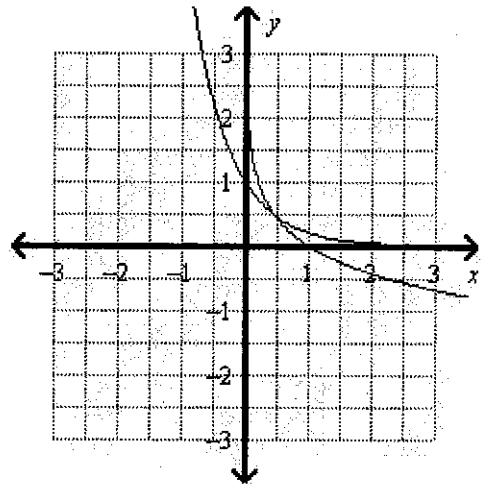
$$y = 722\left(\frac{1}{2}\right)^{71x}$$

- ○ D. ; 0 kg

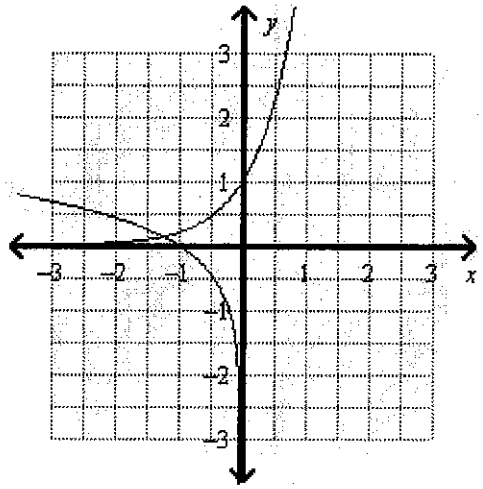
Question 19 of 20 0.0/ 5.0 Points

Graph $y = \log_5 x$ and its inverse.

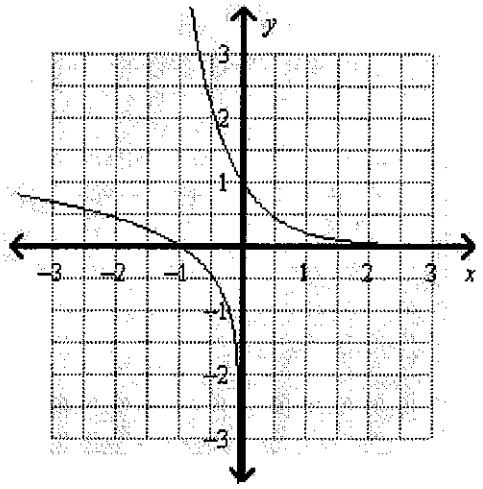
○ A.

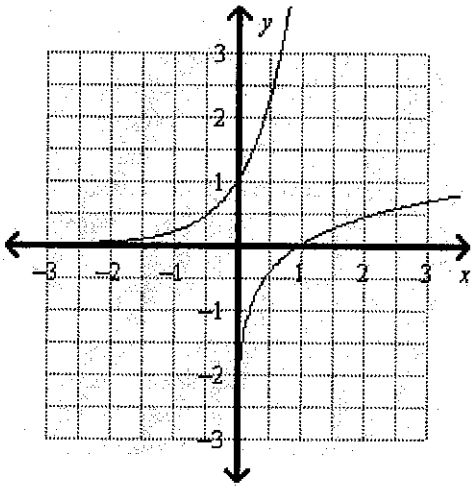


○ B.



◉ C.



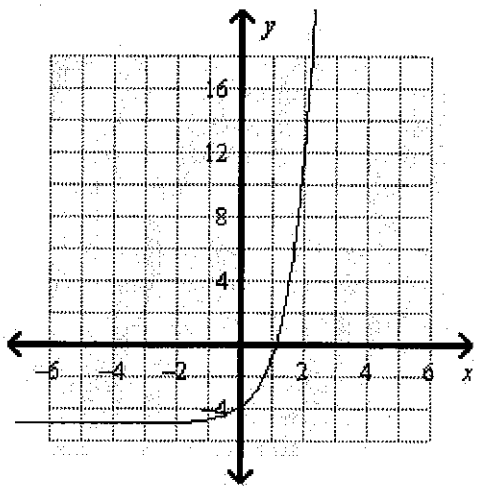


○ D.

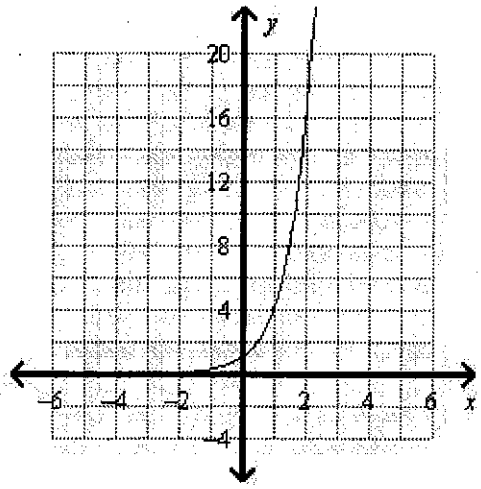
Question 20 of 20 0.0/ 5.0 Points

Graph the exponential function.

$y = 4^x$

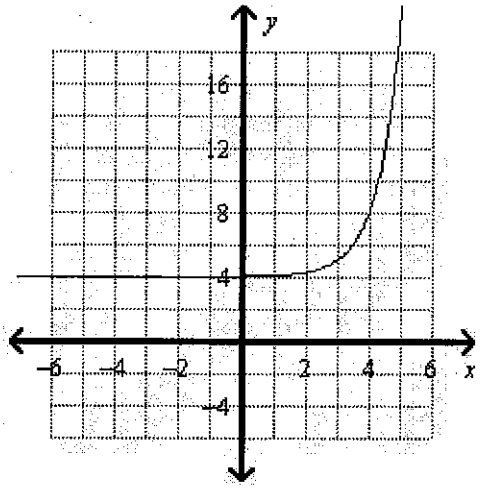


◉ A.



○ B.

○ C.



○ D.