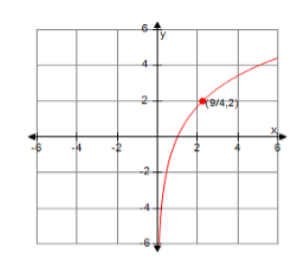


Your Name:

ID #:

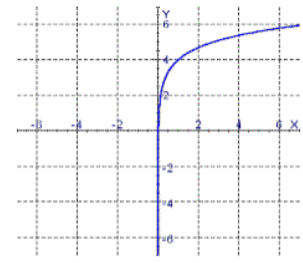
Worksheet: Graphs of logarithmic functions

1. Find the function $f(x) = \log_a x$ whose graph is given.



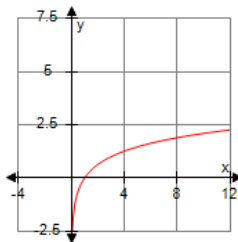
- A. $f(x) = \log_{\sqrt{2}} x$
- B. $f(x) = \log_{\frac{2}{3}} x$
- C. $f(x) = \log_{\frac{3}{2}} x$
- D. $f(x) = \log_{\frac{\sqrt{3}}{2}} x$
- E. none of these

2. Identify the logarithmic function corresponding to the graph.

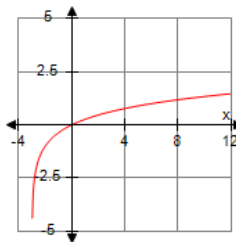


- A. $f(x) = \ln(4 + x)$
- B. $f(x) = \ln(x) + 4$
- C. $f(x) = \ln(x) - 4$
- D. $f(x) = \ln(4 - x)$
- E. none of these

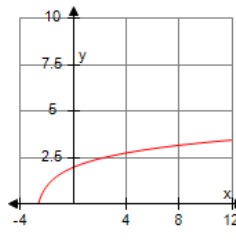
3. Identify the graph of the function $y = \log_3(x - 3) - 1$ using the graph of $y = \log_3 x$ shown in then leftmost below.



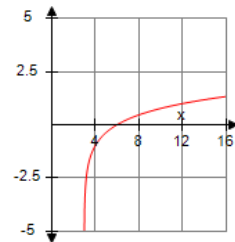
$(y = \log_3 x)$



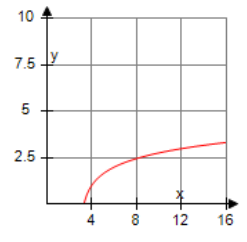
(A)



(B)

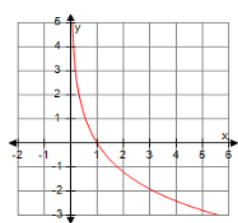


(C)

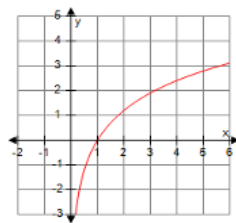


(D)

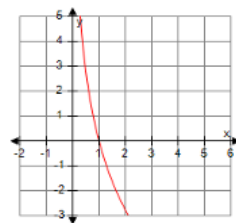
4. Determine the graph of the function $f(x) = -4 \ln x$



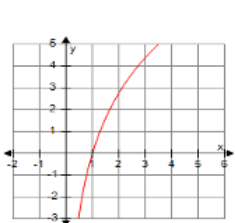
(A)



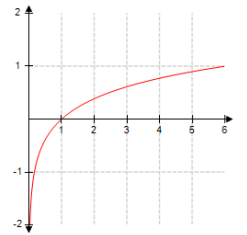
(B)



(C)

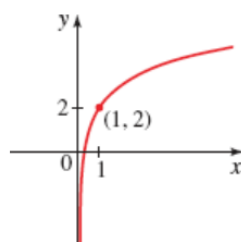
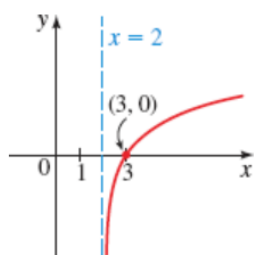


(D)



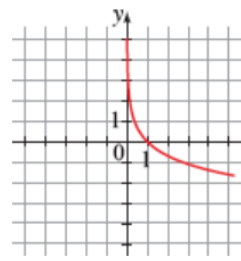
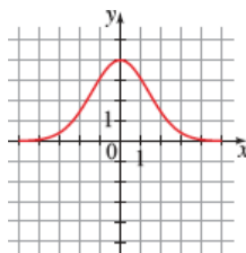
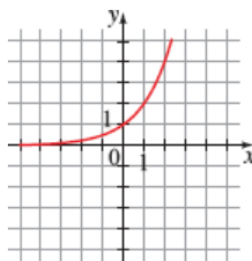
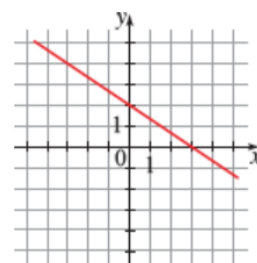
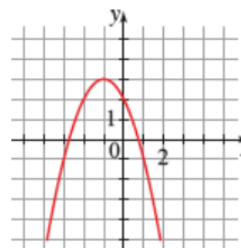
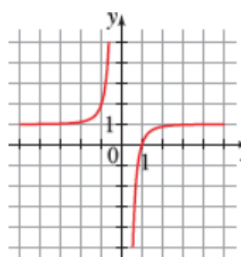
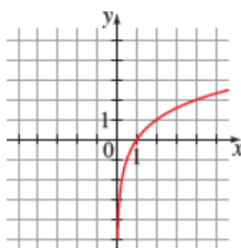
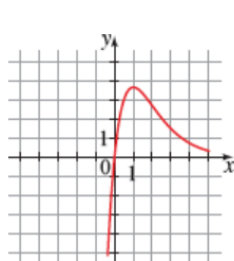
(E)

5. Match the logarithmic function with one of the graphs labeled I or II.



- I. $f(x) = 2 + \ln x$
 II. $f(x) = \ln(x - 2)$

6. Match the functions with graphs



- | | | | |
|-----------------|----------------------------|------------------------------|-----------------------|
| A. $y = 2^x$ | C. $2x + 3y = 6$ | E. $y = \log_2 x$ | G. $y = 2 - 2x - x^2$ |
| B. $y = -\ln x$ | D. $y = 1 - \frac{1}{x^3}$ | F. $y = 4e^{-\frac{x^2}{4}}$ | H. $y = 10xe^{-x}$ |

7. Based on the given graph of $f(x) = \log_{\frac{1}{2}} x$, graph $g(x) = \log_{\frac{1}{2}}(-x)$ and $h(x) = \log_{\frac{1}{2}}(x - 2) + 2$

