

1. Change each exponential statement to an equivalent statement involving a logarithm.

a. $1.2^3 = m$

b. $e^b = 9$

c. $a^4 = 24$

2. Change each logarithmic statement into an equivalent statement involving an exponent.

a. $\log_a(4) = 5$

b. $\ln(b) = -3$

c. $\log_3(5) = c$

3. Evaluate the following:

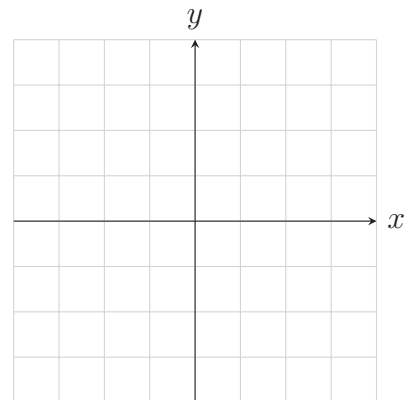
a. $\log_2(16)$

c. $\log_{\frac{1}{2}}(8)$

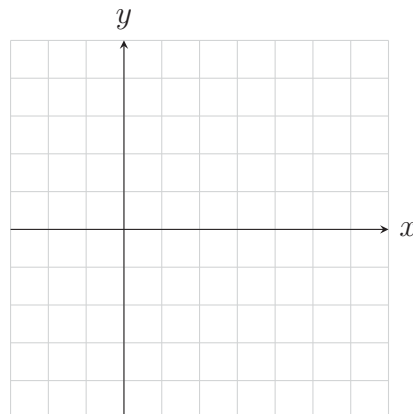
b. $\log_3\left(\frac{1}{27}\right)$

d. $\log_5(1)$

4. Graph $f(x) = e^x$ and $y = \ln(x)$ on the same set of axes. State the domain and range of both.



5. Use transformations to graph $f(x) = -\ln(x - 2) + 1$ then state the domain and range of f .



6. Solve the following equations.

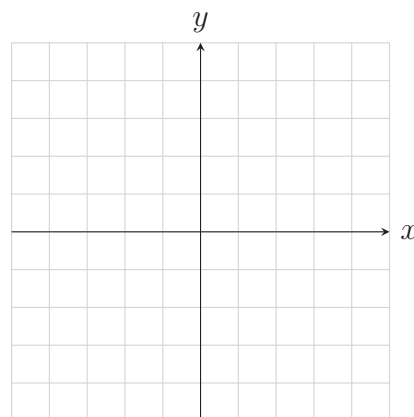
a. $\log_2(8^x) = -3$

c. $4e^{x+1} = 5$

b. $\ln(3x - 2) = 5$

d. $8 \cdot 3^{2x-7} = 4$

7. Consider $f(x) = 3 \log(x - 1)$. Find f^{-1} symbolically, graph f and f^{-1} on the same coordinate plane, and state the domain and range of both.



8. Find the domain of each logarithmic function.

a. $F(x) = \log_2(x + 3)$

b. $g(x) = \log_5 \left(\left| \frac{1+x}{1-x} \right| \right)$

c. $h(x) = \log_{\frac{1}{2}}(|x|)$