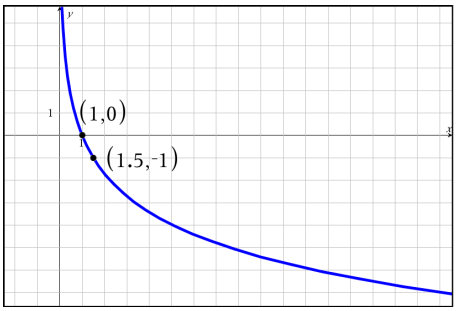
HAT 11/20/17 Name:_____

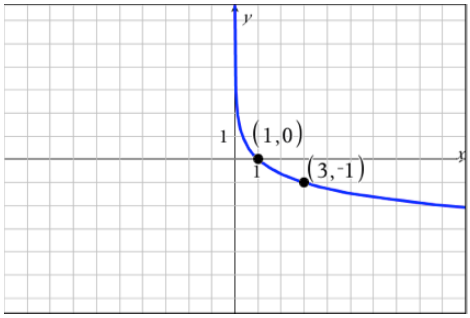
Graphing Logarithmic Functions

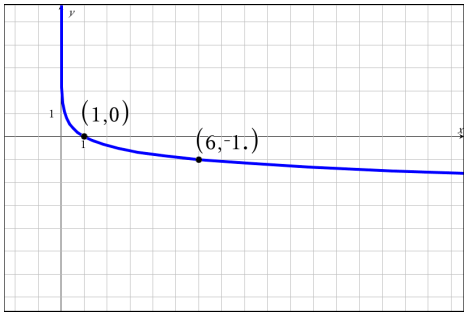
1. Match each graph to the correct function. Graph the inverse if you need help!

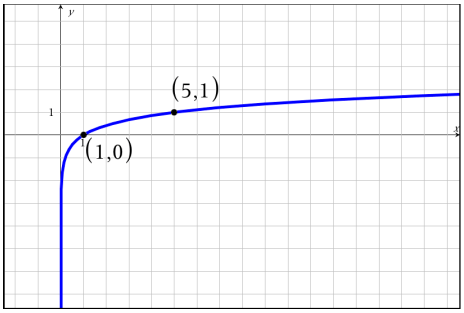
$f(x)=\log_3 x$ $f(x)=\log_{\frac{1}{2}} x$ $f(x)=\log_{\frac{3}{2}} x$ $f(x)=\log_5 x$

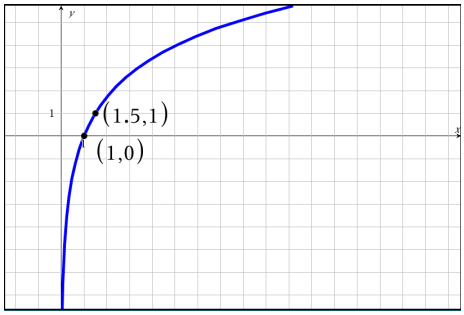
$f(x)=-\log_3 x$ $f(x)=-\log_6 x$ $f(x)=\log_{\frac{1}{4}} x$ $f(x)=\log_{\frac{2}{3}} x$

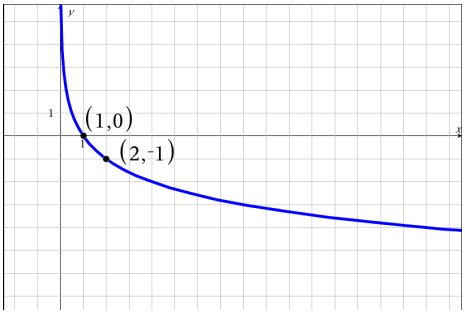


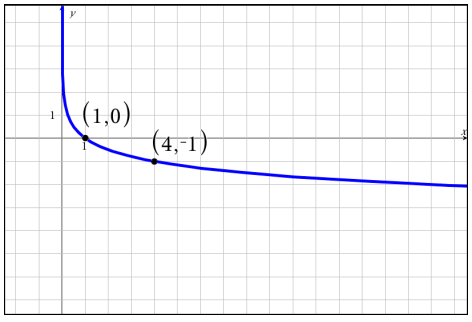


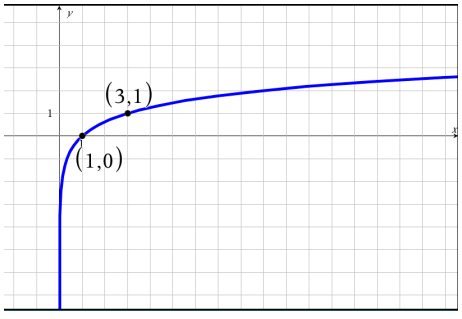












2. Evaluate.

a. $\log_{12} 144$

b. $\log_5 1$

c. $\log_{32} 2$

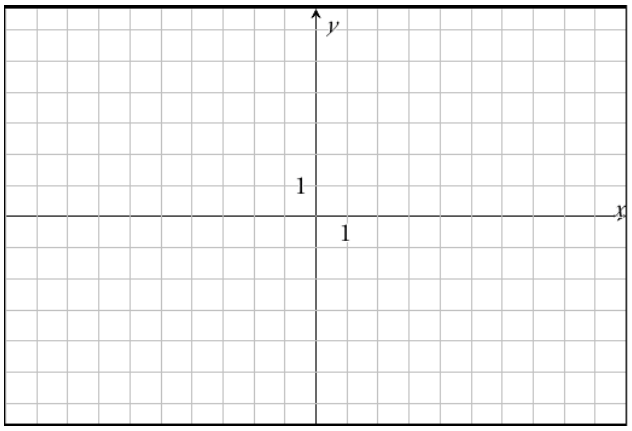
d. $\log_{10} \frac{1}{1000}$

e. $\log_9 27$

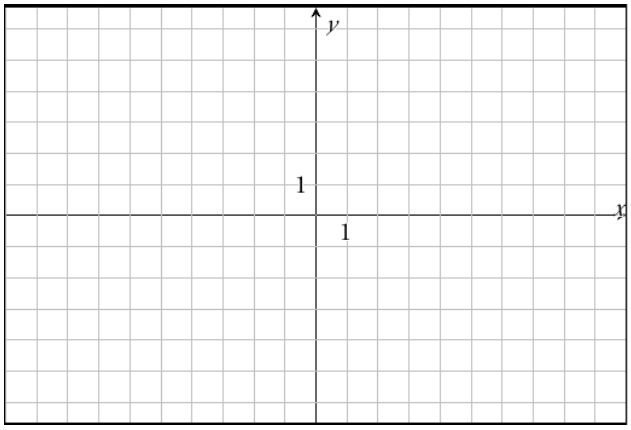
f. $\log_3 (-9)$

3. Graph each function and label 3 points.

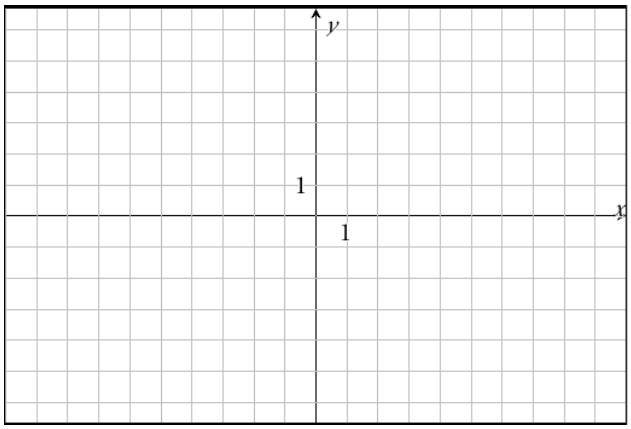
a. $f(x) = -\log_7 x$



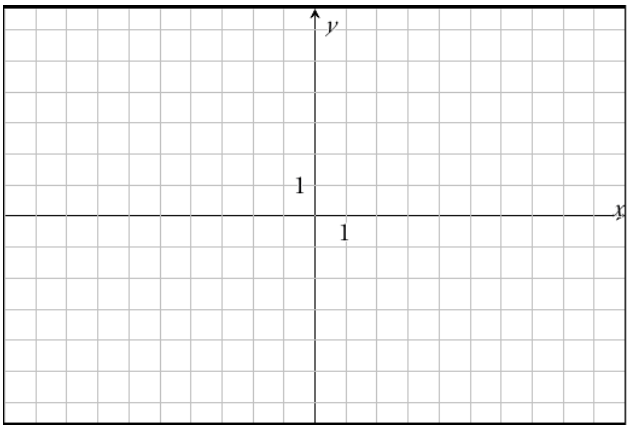
b. $f(x) = -\log_{\frac{1}{5}}(x+3)$



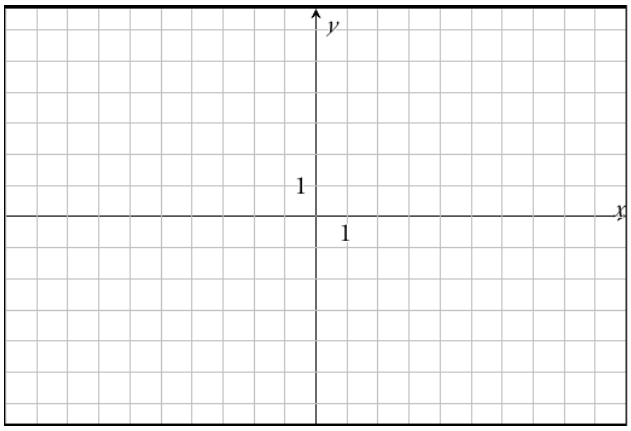
c. $f(x) = \log_6 x + 1$



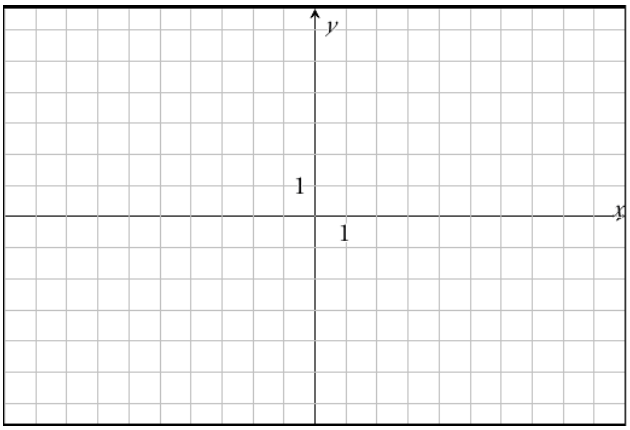
d. $f(x) = -3\log_3 x - 1$



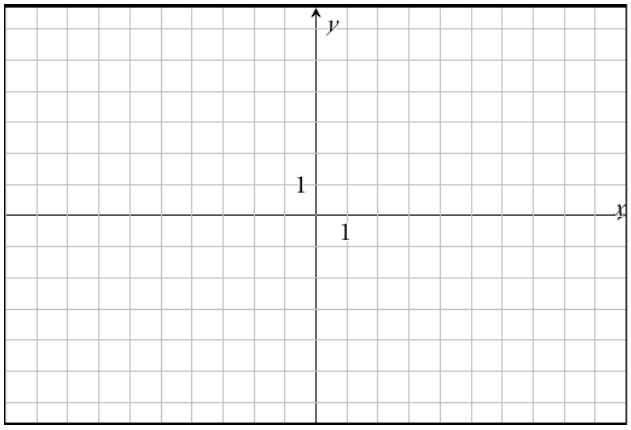
e. $f(x)=\log_4(x-3)$



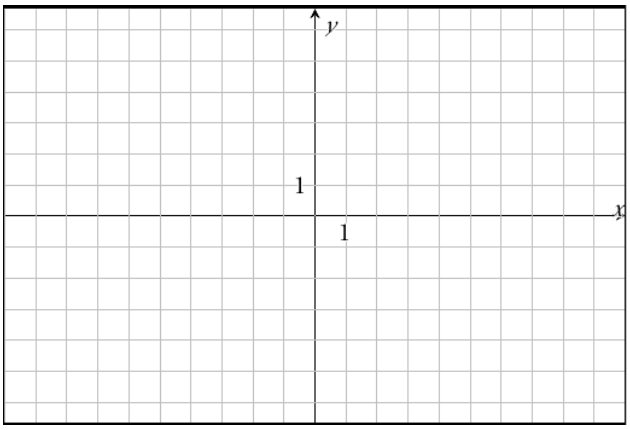
f. $f(x)=-\log_4(x+2)$



g. $f(x)=2\log_3(x-1)$

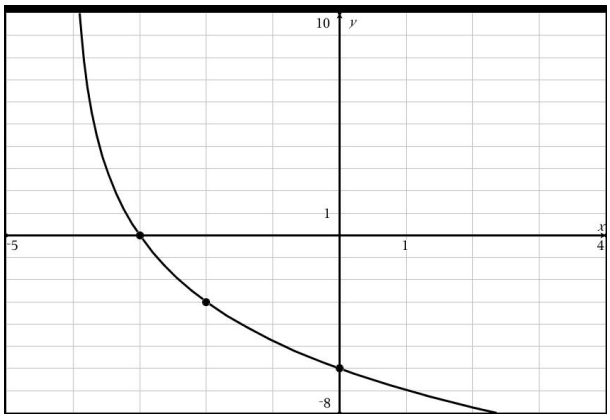


h. $f(x)=\log_{\frac{1}{2}}(x+4)+2$

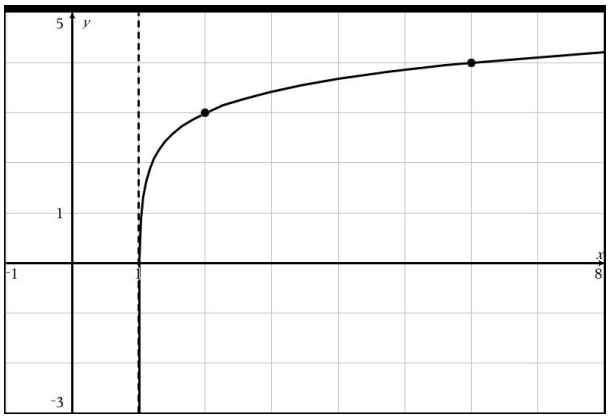


4. Find an equation for each **logarithmic** function.

a.



b.



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