

# AGS 3: Unit 2 Review

Name: \_\_\_\_\_

Date: \_\_\_\_\_ Per: \_\_\_\_\_

Rewrite into logarithmic form.

1.  $2^m = 24$

2.  $3^x = 46$

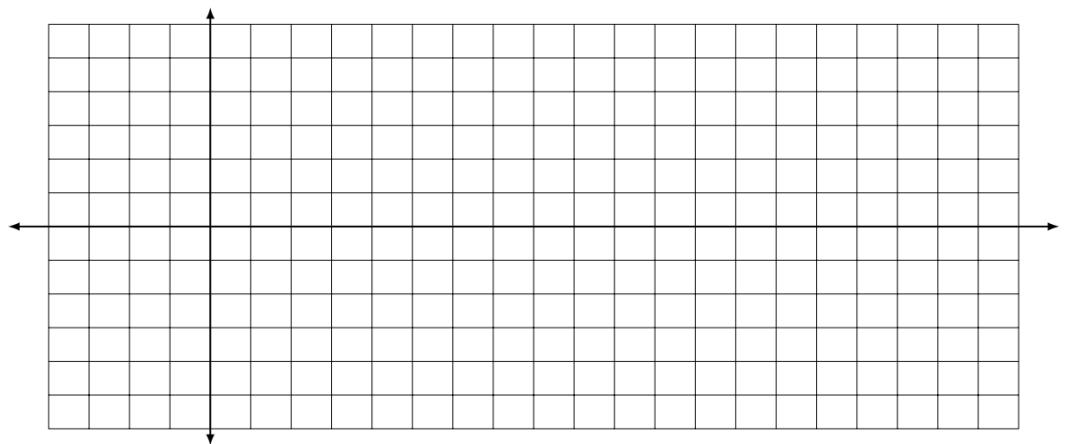
Rewrite into exponential form.

3.  $\log_a 12 = c$

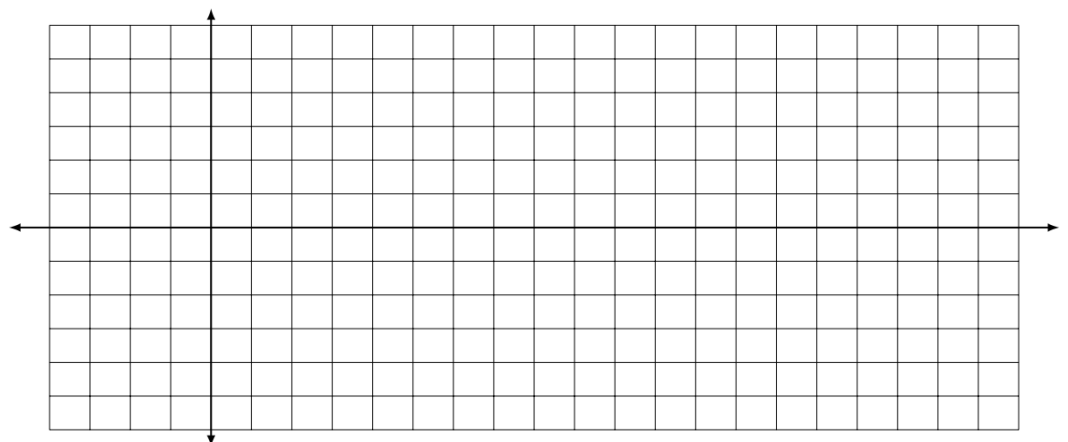
4.  $\log_4 x = 20$

Graph each logarithmic function.

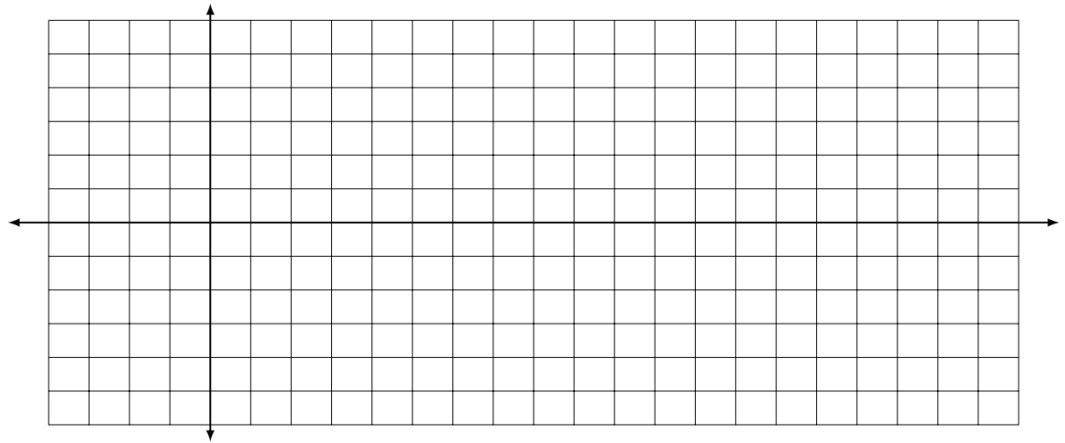
5.  $f(x) = \log_4 x$



6.  $f(x) = -1 + \log_4(x + 2)$



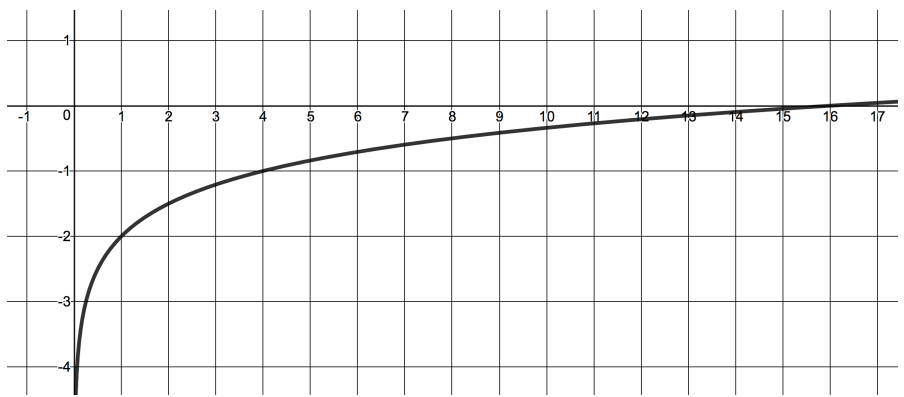
7.  $f(x) = 3 + \log_2(x - 1)$



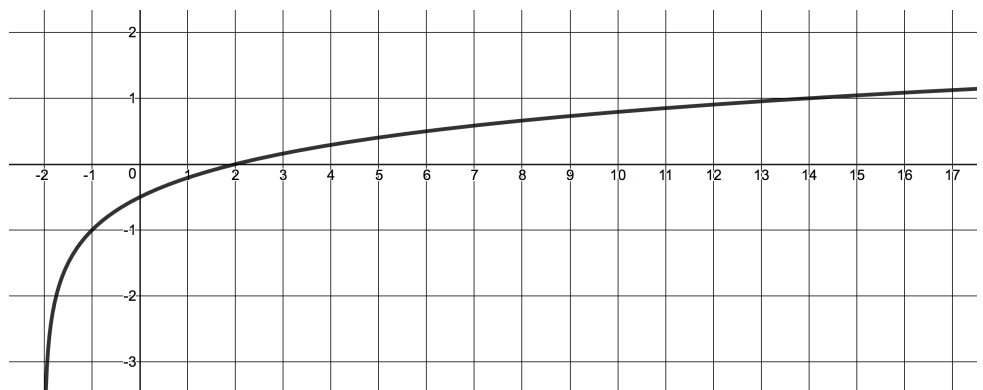
8. Give the features of the graph in #7.

Write the equation for each given graph.

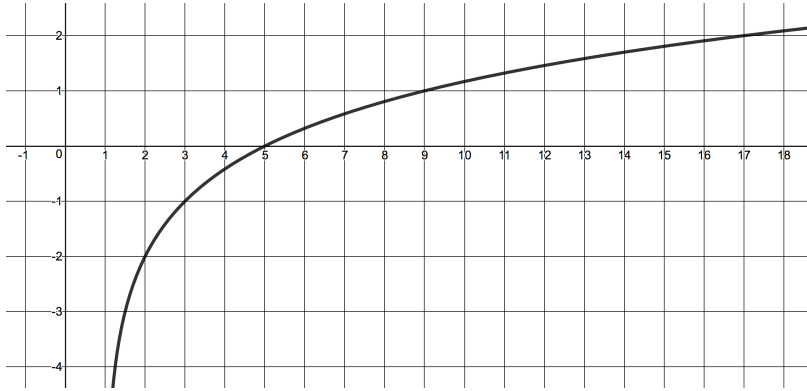
9. Write the equation of the transformation of  $f(x) = \log_4 x$



10. Write the equation of the graph.



11. Write the equation of the graph.



Rewrite and simplify each expression using properties of logarithms.

12.  $\log(4xy)$

13.  $\log\left(\frac{6}{x}\right)$

14.  $\log(2a^4)$

15.  $\log\left(\frac{4}{12x}\right)$

Solve each equation.

16.  $\log_2(x - 1) - \log_2(3x) = 0$

17.  $\frac{\log 3x}{\log 15} = 1$

18.  $10^x = 200$

19.  $10^{x+2} = 410$

Solve each equation.

20.  $2(10^{x+1}) = 142$

21.  $-(10^{-x}) = 55$

No Calculator Part

Given:  $\log 2 \approx 0.3$   
 $\log 3 \approx 0.5$   
 $\log 5 \approx 0.7$

Using the values given to you and logarithm rules, calculate the value of each logarithm.

1.  $\log 9$

2.  $\log 36$

3.  $\log \frac{2}{3}$

4.  $\log 50$

5.  $\log 200$

6.  $\log 0.01$