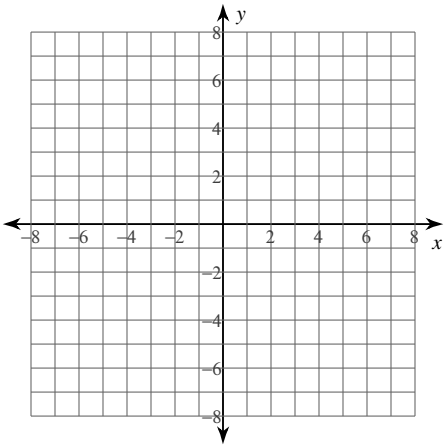
Pre-Calculus Name_____

Graphing Logs

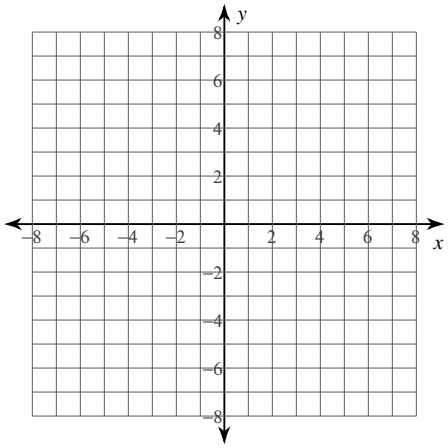
Date_____ Period____

Identify the domain and range of each. Then sketch the graph.

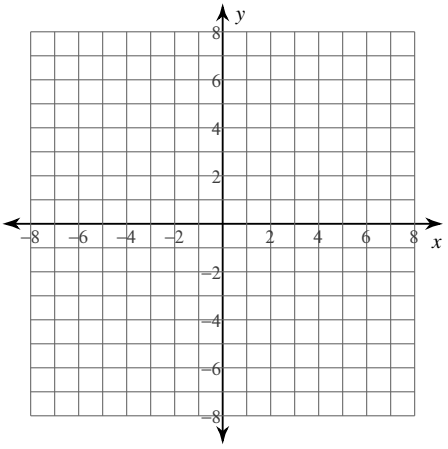
1) $y = \log_6 (x - 2)$



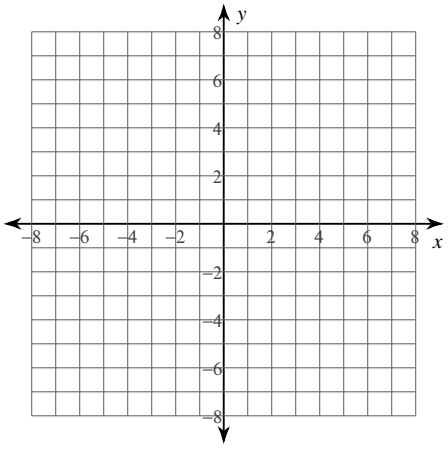
2) $y = \log_3 (x + 3)$



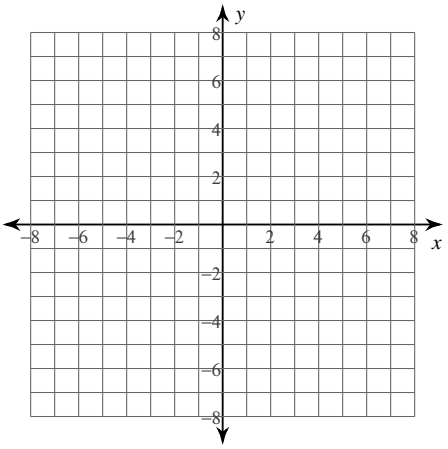
3) $y = \log_4 (x - 1) - 4$



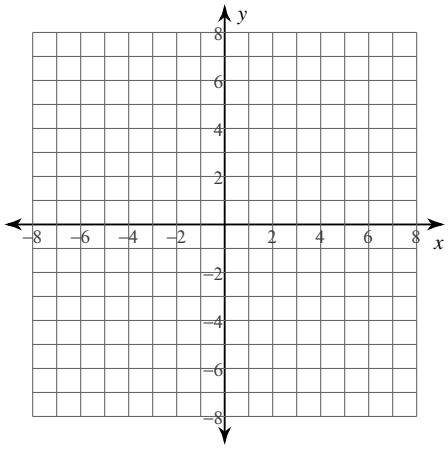
4) $y = \log_2 (x - 3) + 5$



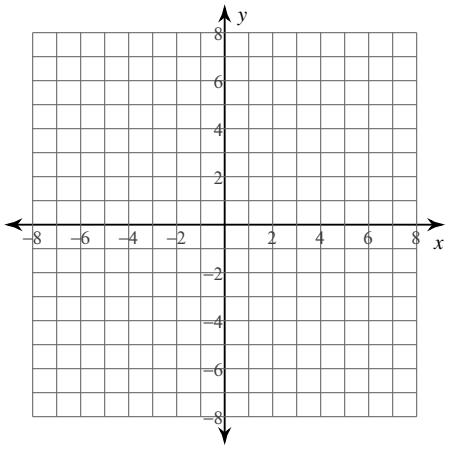
5) $y = \log_5 (x - 1) - 3$



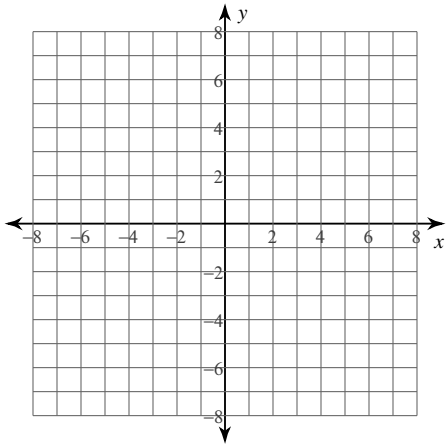
6) $y = \log (x + 2) - 3$



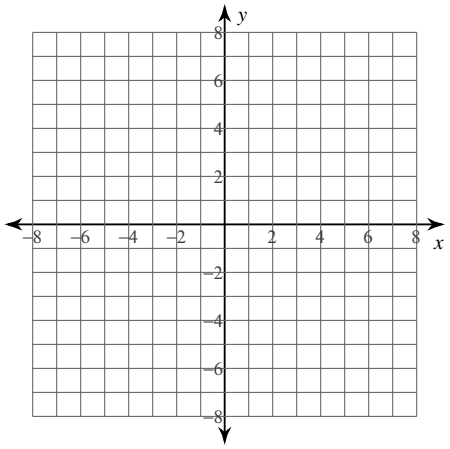
7) $y = \log_5 (x - 2) - 3$



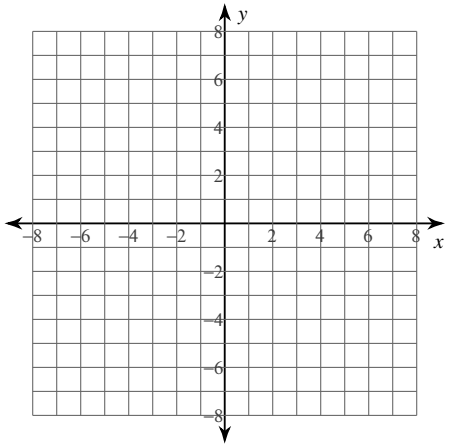
8) $y = \ln (x - 1) + 1$



9) $y = \log_3 (x + 6) - 5$



10) $y = \log_3 (x + 3) - 5$



Find the inverse of each function.

11) $y = \dfrac{e^x}{3}$

12) $y = 10^x - 9$

13) $y = \log_3 (-3x)$

14) $y = \log_5 (2x)$

Expand each logarithm.

15) $\log_5 \left(\dfrac{u}{v^6}\right)^3$

16) $\log_6 \left(c\sqrt{a \cdot b}\right)$

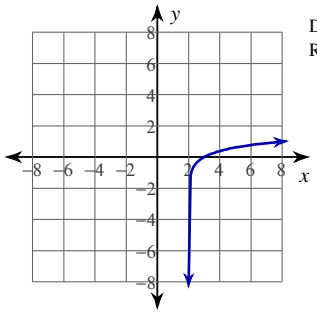
Condense each expression to a single logarithm.

17) $6\log_7 x - 12\log_7 y$

18) $\dfrac{\log_3 u}{2} + \dfrac{\log_3 v}{2} + \dfrac{\log_3 w}{2}$

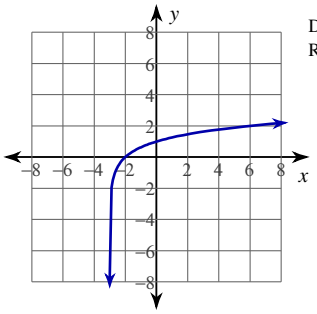
Answers to Graphing Logs

1)



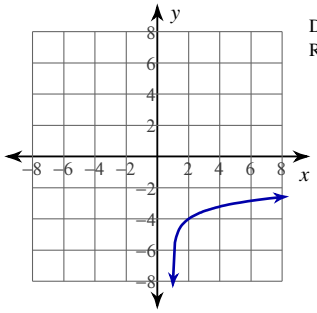
Domain: $x > 2$
Range: All reals

2)



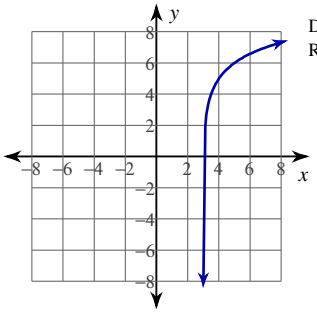
Domain: $x > -3$
Range: All reals

3)



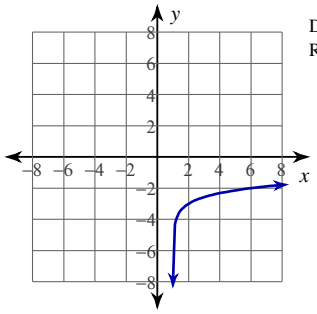
Domain: $x > 1$
Range: All reals

4)



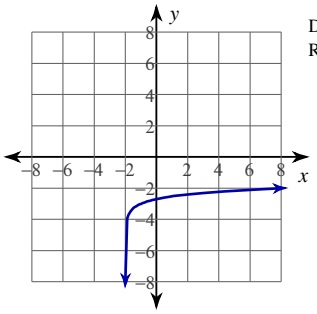
Domain: $x > 3$
Range: All reals

5)



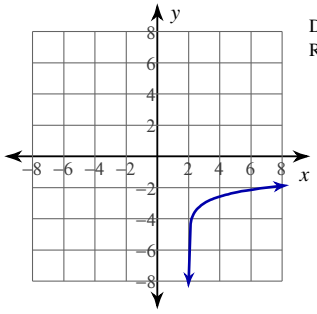
Domain: $x > 1$
Range: All reals

6)



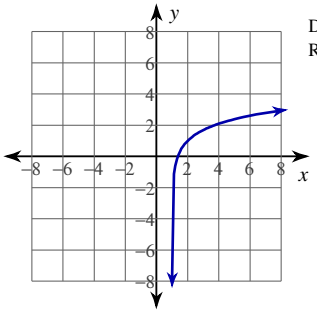
Domain: $x > -2$
Range: All reals

7)



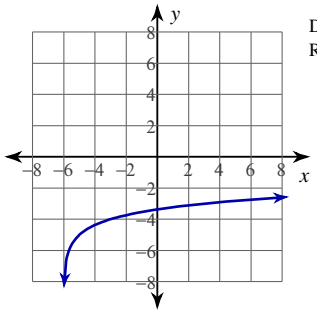
Domain: $x > 2$
Range: All reals

8)



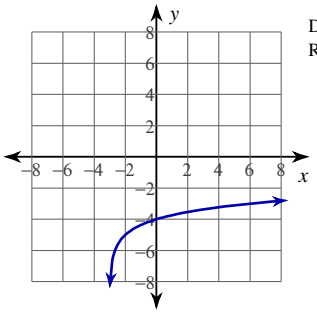
Domain: $x > 1$
Range: All reals

9)



Domain: $x > -6$
Range: All reals

10)



Domain: $x > -3$
Range: All reals

11) $y = \ln 3x$

12) $y = \log(x + 9)$

13) $y = -\frac{3^x}{3}$

14) $y = \frac{5^x}{2}$

15) $3\log_5 u - 18\log_5 v$

16) $\log_6 c + \frac{\log_6 a}{2} + \frac{\log_6 b}{2}$

17) $\log_7 \frac{x^6}{y^{12}}$

18) $\log_3 \sqrt{wvu}$