Secondary Math 3 Name_____

8.3 Intro to Logarithms

Date_____ Period____

Rewrite each equation in logarithmic form.

1) $20^1 = 20$

2) $20^2 = 400$

3) $16^{\frac{1}{2}} = 4$

4) $81^{\frac{1}{2}} = 9$

5) $14^2 = 196$

6) $7^2 = 49$

7) $8^0 = 1$

8) $13^2 = 169$

Evaluate each expression.

9) $\log_4 16$

10) $\log_2 16$

11) $\log_6 \frac{1}{216}$

12) $\log_2 64$

13) $\log_3 \frac{1}{27}$

14) $\log_6 216$

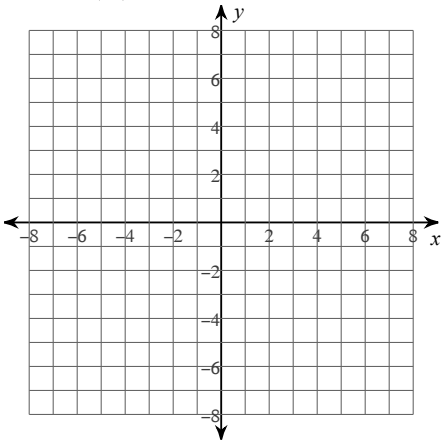
15) $\log_5 125$

16) $\log_4 64$

Graph both functions on the same set of axes.

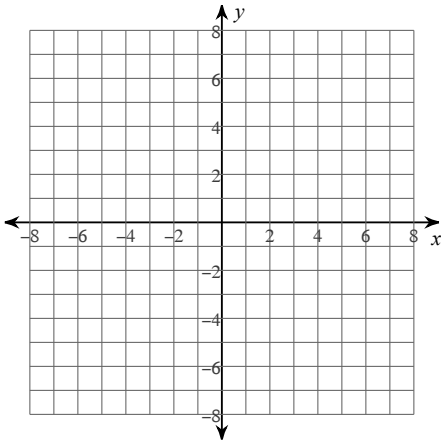
17) a) $y = \log_2 x$

b) $y = \left(\frac{1}{2}\right)^x$

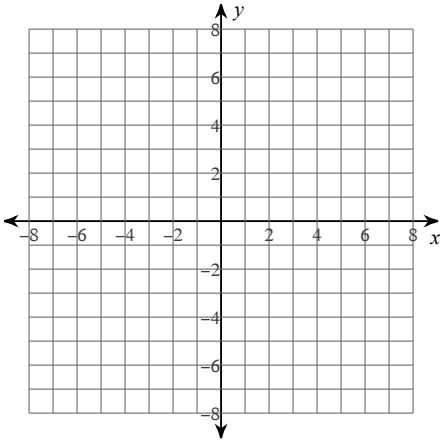


Identify the domain and range of each. Then sketch the graph.

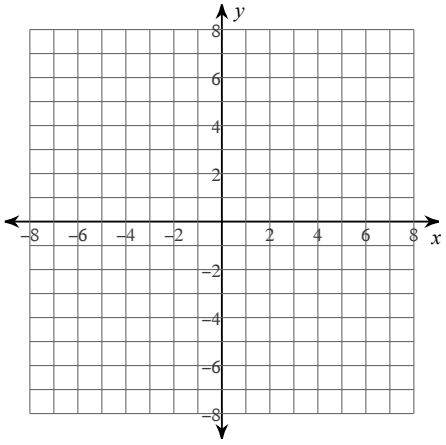
18) $y = \log(x - 1) + 5$



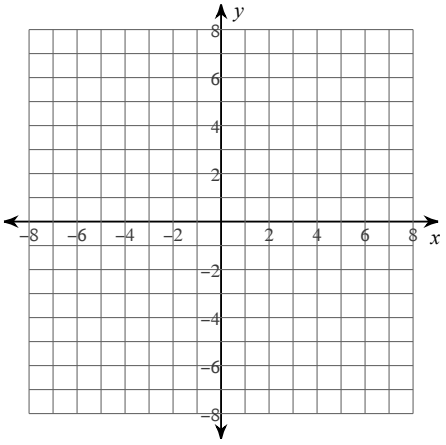
19) $y = \log_3(x + 1)$



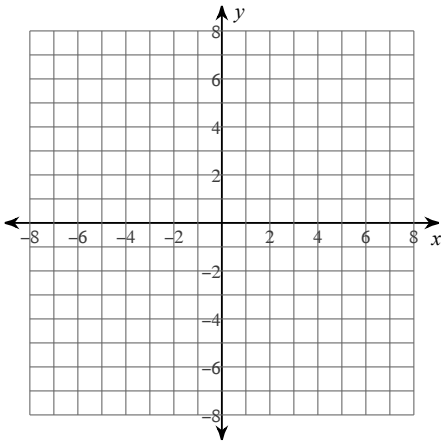
20) $y = \log_4(x - 1) - 1$



21) $y = \log_5(x + 3) + 2$



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



23) $y = \log_4 (x - 1) + 1$