7.14 Mixed Log and Exponential Function Practice Name _____

Use a calculator to evaluate to the nearest thousandth.

1) $\log_7 4.87$

2) $\log_6 1.6$

Solve each equation. Leave your answer in terms of logs.

3) $16^{k-6} - 6 = -2$

4) $-10 \cdot 6^{p-6} = -81$

5) $20^{a+8} + 1 = 47$

6) $3^{a+9} - 1 = 58.6$

7) $11^{4x} - 9 = 36$

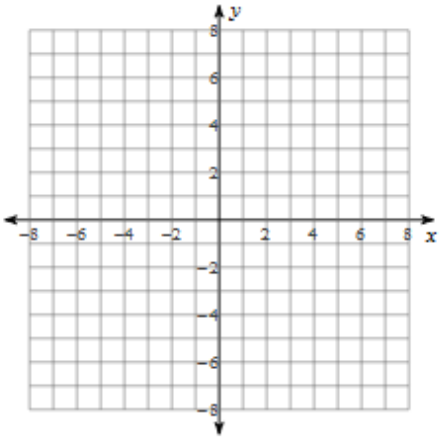
8) $15^{n-6} - 2 = 93$

9) $-9.1 \cdot 16^{5-5x} - 2 = -44$

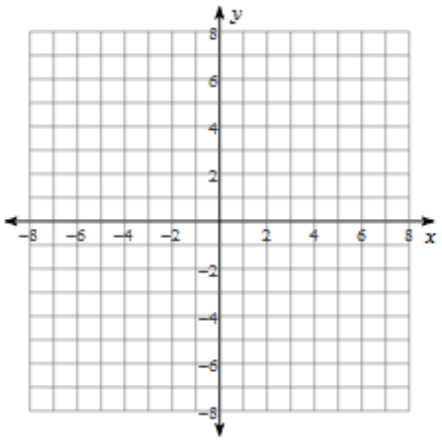
10) $4 \cdot 3^{-7p-4} + 1 = 57$

Graph each function below, labeling your two anchor points. In addition, identify its domain and range.

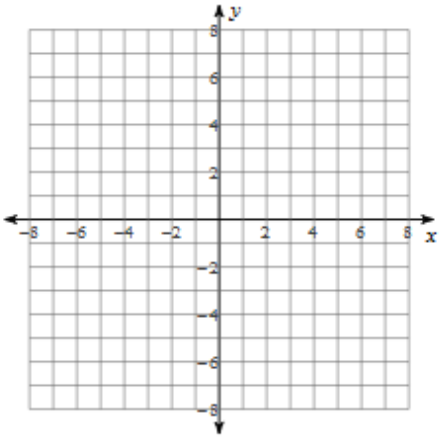
11) $y = \log_6 (x+5) + 3$



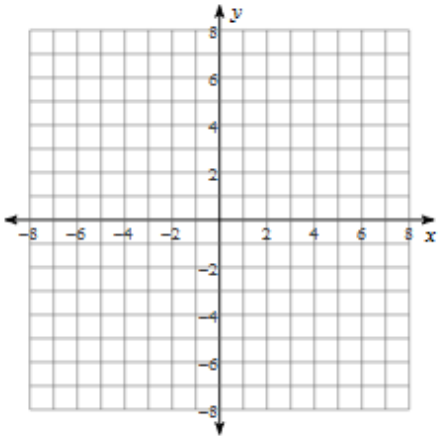
12) $y = \log (x+5) + 4$



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



14) $y = \log_{\frac{1}{3}} (x+6)$



Condense each log.

15) $15\log_6 a + 3\log_6 b$

16) $5\log_7 a + 15\log_7 b$

Expand each log.

17) $\log (ab^6)^3$

18) $\log_5 \left(\frac{u^6}{v}\right)^5$

Solve each equation. Where necessary, round to the nearest thousandth.

19) $\log_{14}(3-n) = \log_{14}(-5n+3)$

20) $\log 13 = \log(-5x-2)$

21) $\log_4(x+29) + \log_4 x = \log_4 62$

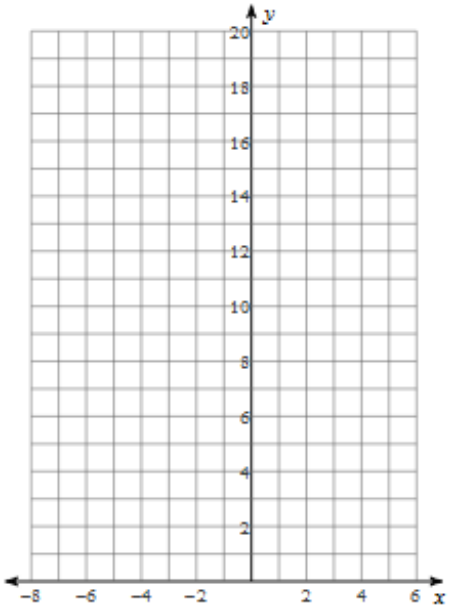
22) $\ln 3x + \ln 8 = \ln 42$

23) $\log_7 6 - \log_7(3x+10) = 1$

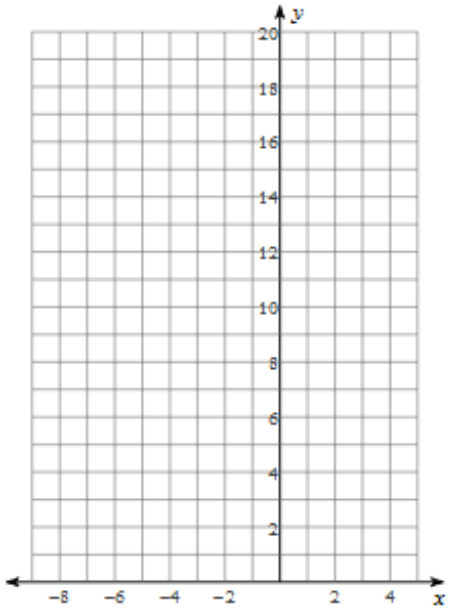
24) $\log_8(2x^2+6) - \log_8 7 = 1$

Graph each equation, including your two anchor points. In addition, note the domain and range for each.

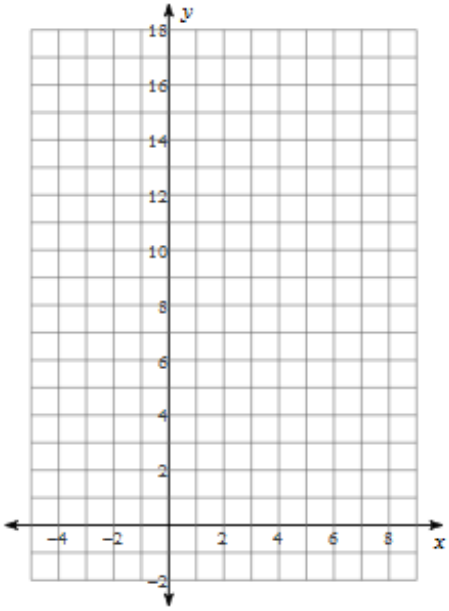
25) $f(x) = 4^{x+1} + 1$



26) $f(x) = \left(\frac{1}{3}\right)^{x+2} + 1$



27) $f(x) = \left(\frac{1}{3}\right)^{x-2} - 2$



28) $f(x) = 3^{x+1} + 2$