

1. Evaluate the following without a calculator!!!

$$\log_7 \frac{1}{\sqrt[5]{49}}$$

$$\log_3 \frac{1}{\sqrt[4]{27}}$$

$$\ln e^{-8}$$

$$\ln e^{13}$$

$$\ln 1$$

$$\log_{13} 1$$

$$5^{\log_5 \frac{1}{2}}$$

$$4^{\log_4 17}$$

$$\ln \sqrt[10]{e}$$

$$\ln \frac{1}{\sqrt[9]{e}}$$

$$10^{\log 100}$$

$$10^{\log e}$$

For problems 2-5, rewrite the expression as a single logarithm.

2. $3\log(ab) - 6\log(bc)$

3. $8\log(x^2y) + 2\log(y^3z^4)$

Pre-Calc: CH3 Practice Test

Name: _____

Period: _____

4. $4 \ln x + 5 \ln 3$

5. $\ln x^5 - 2 \ln 4y$

For problems 6-9, rewrite the expression using the properties of logarithms to expand.

6. $\log(x^3 y^6)$

7. $\log(m^{\frac{1}{2}} n^4)$

8. $\log\left(\frac{12x^8 y^{\frac{1}{3}}}{z^2}\right)$

9. $\log\left(\frac{5q^9 s^{-2}}{4r^{-1}}\right)$

Pre-Calc: CH3 Practice Test

Name: _____

Period: _____

For problems 10-17 solve for x. Show all work!!!!

10. $11^{3x-2} = 14641$

11. $3^{-4x+8} = 729$

12. $4^{z-3} = 2^{3z+7}$

13. $2\log_3(x-3) = 4$

14. $\log(x+2) + \log(x-1) = 4$

15. $\ln(3x+4) - \ln(2x+1) = 5$

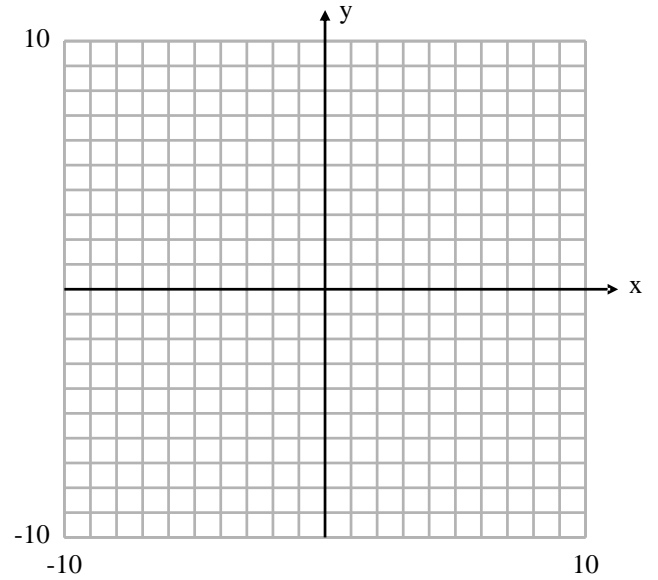
Pre-Calc: CH3 Practice Test

Name: _____

Period: _____

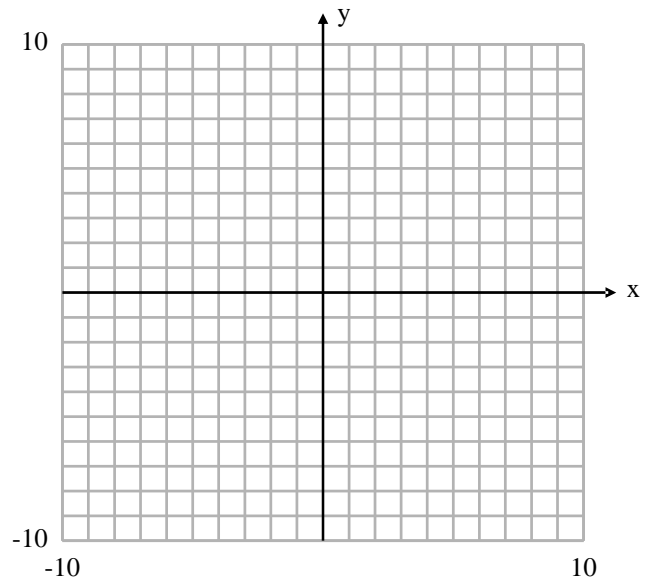
16. Given the points $(0, 2)$ and $(3, 250)$ determine the exponential function.

Then graph.



17. Given the points $(0, 18)$ and $(2, \frac{1}{2})$ determine the exponential function.

Then graph.



18. Sketch the graph of the following function (*checking for accuracy on asymptotes and intercepts*) and determine the following.

$$f(x) = \log(x - 4)$$

Domain:

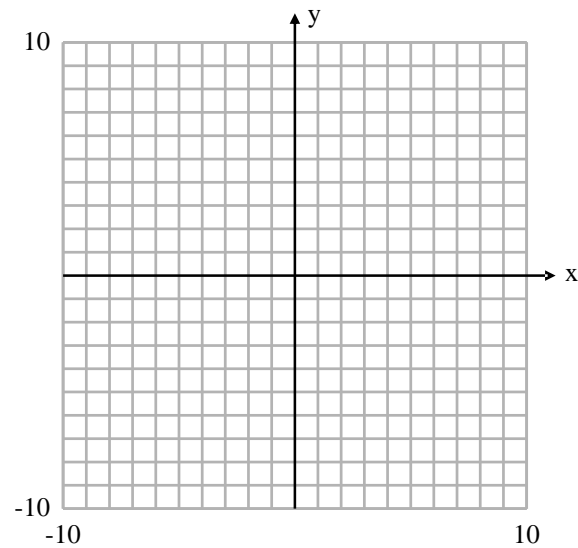
Range:

x-intercepts:

y-intercepts:

Asymptotes:

End Behavior:



19. Sketch the graph of the following function (*checking for accuracy on asymptotes and intercepts*) and determine the following.

$$f(x) = \log(x + 3)$$

Domain:

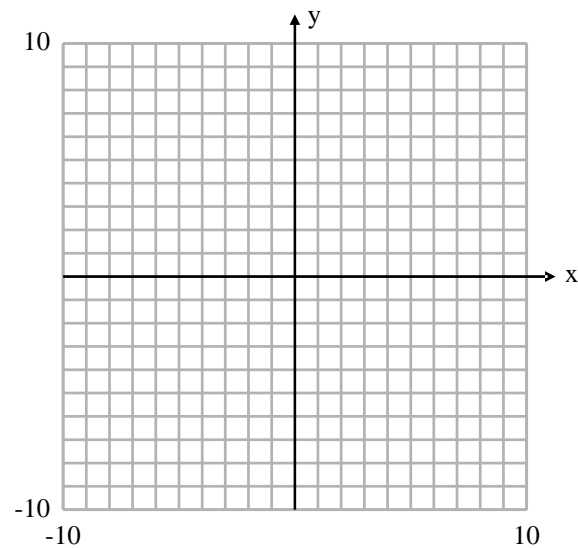
Range:

x-intercepts:

y-intercepts:

Asymptotes:

End Behavior:



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