

Name: _____

Sheet # 532: Logarithms and Graphs

- Rewrite the equation in exponential form:
 $\log_2 64 = 6$.
- Evaluate the expressions:
 - $\log(10,000)$
 - $\log_3(27)$
 - $\ln e^5$
- Simplify the expressions:
 - $9^{\log_9 x}$
 - $e^{\ln(\pi x)}$
- Using calculator, evaluate to **three decimals**, rounding correctly:
 - $\log(2)$
 - $\log(11)$
 - $\log(2) + \log(11)$
 - $\log(22)$

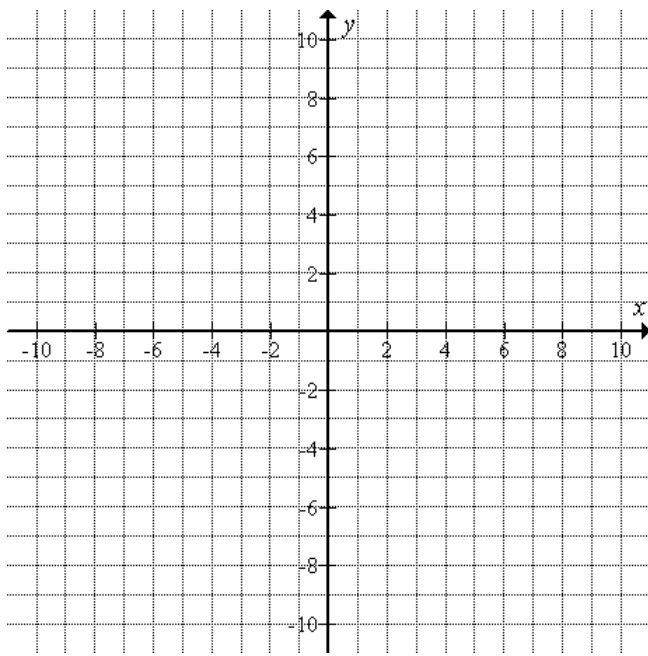
What is going on here?
- Expand the expressions *completely*:
 - $\log_4\left(\frac{2x}{z}\right)$
 - $\ln(17x^5y^2)$
 - $\ln(\sqrt{e^4}x)$
- Condense the expressions into *one* logarithm:
 - $\log(x^5) + \log(y)$
 - $\ln(5) - 7\ln(x) + 2\ln(y)$
 - $\log(x^3) + \log(x^2) + \log(x)$
- Consider $f(x) = \log_8(x+3)$.
 - Find $f(61)$. That is, find y when $x = 61$.
 - Write the equation of the asymptote.

8. (a) Complete the table.

x	$y = \log_4 x$
1/16	
1/4	
1	
4	
16	

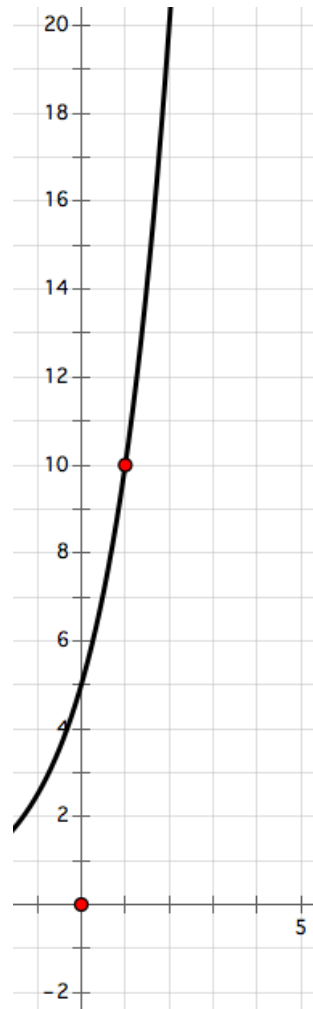
(b) Graph the function y in part (a) using accurate points to show the full curve.

(c) Graph the asymptote and label it "asymptote."



9. Write possible formulas for the graphs. Use exponential functions in the form $y = A \cdot b^x$.

(a)



(b) Answer in any way. Then answer without decimals and without radicals (n th roots), if you have not already done so.

