

Sm3.A4.C - Properties of Logs	Name
Solve 1-6 WITHOUT using a calculator!	
1. Simplify: a. $\log_3 \frac{1}{27}$ b. $\log_4 \frac{1}{4}$	2. Solve for x: $\log_4 8x = 3$
3. Solve for x: $\ln(2x) = 0$	4. Simplify: a. $\log_3 9 =$ b. $\log_9 1$
5. Simplify: a. $3\log_2 2$ b. $\ln(e)$	6. Solve for x: $\frac{1}{2}\log_5 x - 5 = -2$
7. Change the following to Log form, and then use change of base to find the exponent. $3^x = 380$	8. Change the following to Log form, and then use change of base to find the exponent. $5^x = 240$

9. Change the following to Log form, and then use change of base to find the exponent.

$$3^x = 45$$

10. Change the following to Log form, and then use change of base to find the exponent.

$$2^x = 120$$

13. Write an equation that matches the following table:

time	Amount
0	9
0.25	18
0.5	36
0.75	72
1	144
1.25	288

14. Decide if the equation represents exponential growth or exponential decay. Then find the initial amount (y-intercept).

$$\text{A. } y = 12 \cdot \left(\frac{8}{10}\right)^x$$

y-Intercept (,)

$$\text{B. } f(x) = 3 \cdot \frac{13}{6}^x$$

y-Intercept (,)

15.