

Make sure to show all work if you want credit.

Evaluate the given log using the change of base formula		
$\log_4(14)$ 1.9037	$\log_3(5)$ 1.465	$\log_2(19)$ 4.248
Expanded form using the properties of logarithms.		
$\log_5(2x)$ $\log_5(2) + \log_5(x)$	$\log_6\left(\frac{x}{5}\right)$ $\log_6(x) - \log_6(5)$	$\log_7\left(\frac{2x}{5}\right)$ $\log_7(2) + \log_7(x) - \log_7(5)$
Condense the logarithmic expression till you have a single logarithm.		
$\log_8(5) + \log_8(x)$ $\log_8(5x)$	$\log_9(5) - \log_9(x)$ $\log_9\left(\frac{5}{x}\right)$	$\log(3) + \log(y) - \log(5)$ $\log\left(\frac{3y}{5}\right)$
Solve for x.		
$\log_2(10x) = \log_2(3x + 28)$ 4	$\log_2(x + 5) = 4$ 11	$\log_2(x) + \log_2(x + 3) = 2$ 1
$6^{3x-2} = 11$ 1.112763611	$4^x = 8^2$ 3	$25^x = 125^{x-2}$ 6
Answer the following application problems.		
Ricardo invests \$8650 in an account that earns 3.9% interest compounded <u>continuously</u> . What is the total amount of his investment after 9 years? Identify the following: $P = 8650$ $t = 9$ $r = 3.9\%$ $P(t) = X$ use $A = Pe^{rt}$	Suppose that \$590 is deposited into an account that pays 3.5% compounded quarterly. How long will it take for the account to contain at least \$800? Identify the following: $P = 590$ $t = X$ $r = 3.5\%$ $n = 4$ $P(t) = 800$	If you deposit \$4000 into an account paying 9% annual interest compounded monthly, how long until there is \$10,000 in the account? Identify the following: $P = 4000$ $t = X$ $r = 9\%$ $n = 12$ $P(t) = 10,000$
If you deposit \$5000 into an account paying 8.25% annual interest compounded semiannually, how long until there is \$9350 in the account. Use the following formula to find the length of time. $5000\left(1 + \frac{8.25\%}{2}\right)^{2t} = 9350$ $t = 7.74$	Mrs. Peters deposited \$6000 into an account paying 6.5% annual interest compounded quarterly, how long would it take the money to grow to \$12600? $6000\left(1 + \frac{6.5\%}{4}\right)^{4t} = 12600$ $t = 11.51$	Mr. Malt took \$4500 of savings to invest in the Dallas Pounce Co-op. The Co-op said that they would pay him back in 10 years. The guaranteed a 5% interest compounded monthly. How much will Mr. Malt have at the end of that period of time? 7411.54