

Problem Set 5.6

Solve the equations. Show all of your work in order to receive full credit.

1.) $5^{x-4} = 25^{x-6}$

2.) $36^{5x+2} = \left(\frac{1}{6}\right)^{11-x}$

3.) $\log_4(x+3) - \log_4(x-5) = 2$

4.) $5^{2x+1} = 3^{x-5}$

5.) $\log_4(-x) + \log_4(x+10) = 2$

6.) $\log_5(5x+9) = \log_5(6x)$

7.) $\frac{1}{3}\log_5(12x) = 2$

8.) $\log_2(x-4) = 5$

9.) $10^{x+4} = 3^{5x-1}$

10.) $\log_2(x) + \log_2(x-2) = 3$

11.) $5 \ln(x) = 35$	12.) $\ln(-3x - 1) - \ln 7 = 2$
13.) $8^x = 20$	14.) $\log(5x - 2)^2 = 4$
15.) $e^{-x} = 5$	16.) $7^{3x} = 18$
17.) $10^{4x-3} = 24$	18.) $\log(x) + \log(x - 1) = \log 72$

Word Problems. An investment of \$1,750 earns 5.75% interest, which is compounded monthly. After approximately how many years will the investment be worth \$5,000?

A stock bought at an initial price of \$5 per share is worth \$12 after 7 years. Find the rate of continuously compounded interest in this investment.