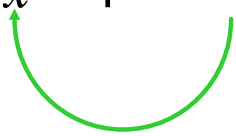
Sec 8.6
Solving Log Equations

Use log rules to simplify the equations and then solve.
You may have to change between Log and Exponential Forms to solve.

Ex $\log_2 x = 4$



Jan 6-10:30 AM

recall:

Product law: $\log_a xy = \log_a x + \log_a y$

Quotient law: $\log_a \left(\frac{x}{y}\right) = \log_a x - \log_a y$

Power law: $\log_a x^r = r \log_a x$

Dec 31-3:09 PM

Solve

$$5^{x+1} = 27$$

Sep 25-9:10 AM

Solve

$$5(x^3) - 9 = 311$$

Sep 25-9:11 AM

Solve

$$\log_x 121 = 2$$

Sep 25-9:12 AM

Summary so far:

Where is the unknown value?

- unknown exponent - consider using Logs and Log rules to bring down

- unknown base - look to isolate and use regular power rules

- unknown log base - look to write in exponential form

Don't be afraid to try something and see if it works?

Don't be afraid to abandon a strategy if doesn't seem to work?

Sep 25-9:14 AM

Ex: $\log_2 30x - \log_2 5 = \log_2 12$

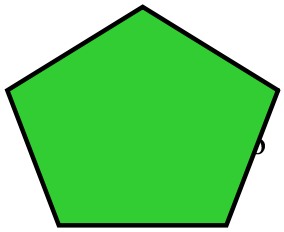
First check if the bases are all the same.

Jan 6-10:39 AM

Ex: $\log x + \log x^2 = 12$

Jan 6-10:42 AM

Ex: $\log_2(x+3)+\log_2(x-3)=4$



Jan 6-10:43 AM

Homework

p491 #1ace, 2ace, 4ace, 5, 7

Jan 6-10:45 AM