

Exponential Equations

Can make bases same

Make bases same number, and then set exponents equal to one another

Example: $4^x = \left(\frac{1}{2}\right)^{x-3}$

Cannot make bases same

Put into log form and solve

Example: $4^x = 11$

Logarithmic Equations

Log on both sides

Use property of equality for logarithmic equations

Example: $\log_5(4x-7) = \log_5(x+5)$

Log(s) on one side

Only one log: Put in exponential form and solve

Example: $\log_2(x-6) = 5$

Two or more logs on one side: condense first then put in exponential form to solve

Example: $\log_4(x+12) + \log_4 x = 3$

In the problem?
Condense and make both sides powers of e

e in the problem?
Isolate e and take ln of both sides.

Does an answer cause the log to be less than 0? Extraneous!