Rearranging an Equation to Isolate Variable - *by Autumn Wild, Brock U Nursing 4th year*

The ultimate goal is to isolate the variable so you can determine its value.

Remember the following two rules. Following with either rule provides you with the example.

Rule	Details	Example
1. Opposite Side, Opposite Operation	When moving a variable or number from one side to the other, REVERSE the operation. - Addition to Subtraction - Multiplication to Division - Squared to Square Root	Isolate a. a + 1 = 4 Move +1 to right side. Change to subtraction. a = 4 -1 a = 3
2. What you do to one side, you MUST do to the other side.	If you add to one side of the equation, you have to add to the other side of the equation.	Isolate a. a + 1 = 4 Subtract 1 from left side, so you must subtract 1 from right side. a + 1 - 1 = 4 - 1 a = 3

Practice

Rearrange the following equations to isolate the value of T.

PV = n + RT

PV - n = RT (Example of Rule 1: opposite side, opposite operation, so + n becomes – n)

(PV - n) ÷ R = ~~RT~~ ÷ ~~R~~ (Example of Rule 2: divide by R on both sides to isolate T)

(PV - n) ÷ R = T or T = (PV - n) ÷ R