

Accuplacer Study Modules

TOPIC: Solving Linear Equations

Khan Academy Link: <https://www.khanacademy.org/math/in-eighth-grade-math/linear-equations-one-variable/reducing-equations-simpler-form/v/solving-equations-with-the-distributive-property>

Sample Problem:

Solve the equation for x: $3 - 4(x + 5) = 2x - 7$

Follow the basic steps given below to solve most linear equations. You may not need every step, but you should consider each step in this order when solving your linear equation. Your goal is to get the variable isolated or by itself.

Distribute

Combine like terms (like terms are ALREADY ON THE SAME SIDE OF THE EQUAL SIGN)

Get all variables to one side of the equation (think “letters left”)

Get rid of addition or subtraction (you get rid of the addition or subtraction that is ON THE SAME SIDE as the variable term)

Get rid of multiplication or division

Solution

$$3 - 4(x + 5) = 2x - 5$$

Note: Distribute -4. Notice the sign of each term in parentheses changes

$$3 - 4x - 20 = 2x - 5$$

Note: Combine like terms (REMEMBER THEY MUST BE ON THE SAME SIDE OF THE EQUAL SIGN TO BE COMBINED IN THIS STEP)

$$-4x - 17 = 2x - 5$$

$$-2x - 17 = -2x - 5$$

Note: Get all variables to one side. For many students it is easiest to think of getting the “letters on the left” side of the equation but you can move them to either side. To remove something from one side of an equation you must add the opposite to both sides.

$$-6x - 17 = -5$$

$$-6x - 17 + 17 = -5 + 17$$

Note: Get rid of addition or subtraction. In this case, we get rid of the 17 since it is on the side that the “x” is on.

$$-6x = 12$$

Note: get rid of multiplication – divide both sides by -6

$$\frac{-6x}{-6} = \frac{12}{-6}$$

$$x = -2$$

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TOPIC: **Solving Linear Equations**

Instructions: Solve each equation

1. $5(x + 3) - 7x = -3$

2. $4x + 7 - 10x = -8x + 15$

3. $2(x - 6) = 5(2x + 4)$

4. $5 - 2(x + 3) = 4x + 2(x - 7)$