

Solving Linear Relations

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Solving Linear Equations

What does it mean to solve a linear equation or any equation? Whenever I see the word *solve* I immediately think about finding the value for a particular variable or variables. In the case of a linear relation, we are only dealing with one variable. For example, we want to solve the equation below for x .

$$5x + 24 = -2 + 3x$$

How do we do this? We start bringing all the terms with x on one side of the equal sign and numbers on the other side.

$$5x + 24 = -2 + 3x$$

$$5x - 3x = -2 - 24, \text{ subtract } 3x \text{ from both sides and } 24 \text{ from both sides}$$

$$2x = -26$$

$$\frac{2x}{2} = \frac{-26}{2}, \text{ divide both sides by } 2$$

$$x = -13$$

Exercises

1. Solve the following linear relations.

a) $6x - 3 = 2x + 7$

b) $\frac{1}{2} - 6x = 2$

c) $5 + 2x = 9 - x$

d) $0 = 4x + 9 - 2x$

e) $3x - 7 = 2 + 6x$

f) $-5x + 2 - x = 3x + 7$