1.3 Solving Equations

equation: sentence stating 2 mathematical statements are equal

Write expressions

Algebraic $\longrightarrow$ Verbal

Verbal $\longrightarrow$ Algebraic

Ex: six times the cube of a number

5 less than the twice the square of a number

Use the properties of equality and the properties of real numbers to solve equations (Undo PEMDAS)

Ex: One step $18 = \frac{1}{2}y$

Ex: Multi-step

$$53 = 3(x - 2) - 2(3x - 1)$$

Ex: Solve for a variable

Solve for a: $x = \frac{-b}{2a}$

Ex: Multi-step

$$53 = 3(x - 2) - 2(3x - 1)$$

Ex: Write an equation for a situation

When Mike rented a moving truck, he agreed to pay $28 per day plus $0.42 per mile. If he kept the truck for 3 days and the rental charges were $153.72, how many miles did he drive the truck?

1. Read the problem
2. Define variables
3. Write an equation
4. Solve the equation
5. Answer the question

1.4 Solving Absolute Value Equations

Absolute value: distance from zero

How many numbers can solve this equation?

$$|x| = 3$$

Therefore, to solve absolute value equations, you must take 2 cases.

Ex: Solve $|y + 3| = 8$

Ex: Solve: $|8 + x| = 2x - 3$

Ex: $|6 - 4t| + 5 = 0$

Ex: p. 30 #14-16