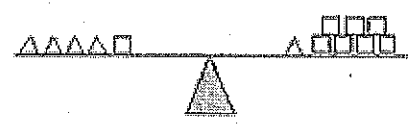


8.EE.7 solve linear equations in one variable

The balance below shows the equation $4x+1=x+7$. What is the value of x?



- A) $8/5$ **(B) 2** C) $8/3$ D) 3

If $\frac{x+1}{x} = \frac{2}{3}$, what is the value of x?

- (A) -3** B) -1 C) 1 D) 3

Solve the following equation for x.

$$\frac{1}{3}(18x + 12) = -3x + 40$$

- A) $x = -21$ C) $x = 12$
(B) $x = 4$ D) $x = 5$

Which of the following best describes the solution to the following equation?

$$-3x + \frac{1}{2}(6x + 11) = -3.5$$

- A) One solution $x = 3.5$
 B) Infinitely Many Solutions
(C) No Solutions
 D) One solution $x = 5.5$

Part A: Give an example of a linear equation to represent each type of solution set:

- A linear equation with exactly one solution

$$x + 1 = 6$$

Answers will vary!

- A linear equation with infinitely many solutions

$$x + 1 = x + 1$$

- A linear equation with no solutions

$$x + 1 = x + 10$$

For each example, explain why the equation has that number of solutions.

$$\begin{array}{r} x + 1 = 6 \\ -1 \quad -1 \\ \hline x = 5 \end{array}$$

(one sol.)

$$\begin{array}{r} x + 1 = x + 1 \\ -1 \quad -1 \\ \hline x = x \end{array}$$

Inf. sol.
always true

$$\begin{array}{r} x + 1 = x + 10 \\ -1 \quad -1 \\ \hline x = x + 9 \\ -x \quad -x \\ \hline 0 = 9 \end{array}$$

No sol. (Never true)

Part B: What is the solution set for the equation $3x + 8 + 4x - 3 = 9x - 7 + 2x + 8$? Show your work.

$$\begin{array}{r} 7x + 5 = 7x + 1 \\ -7x \quad -7x \\ \hline 5 = 1 \end{array}$$

Never true

$$7x + 5 = 7x + 1$$

NO SOL.

Solve for y.

$$11(y - 2) + 3y = -7y + 14$$

- A. $\frac{7}{12}$ **B. $1\frac{5}{7}$** C. 14 D. 21

What is the solution to $3x + 1 = 4x - 6$?

- A. $x = 5$
 B. $x = 6$
C. $x = 7$
 D. $x = 8$

The three linear equations below are solved for the variable a.

$$2a - 6a = 12$$

$$-4a = 12$$

$$a = -3$$

$$3a \times 5 - 4 = \frac{30}{2}a - \frac{8}{2}$$

$$15a - 4 = 15a - 4$$

$$15a = 15a$$

$$a = a$$

$$7a + 1 = 7a - 3$$

$$7a = 7a - 4$$

$$0 = -4$$

Which of the following describes the number of solutions for each equation, from left to right?

- A. one solution, infinitely many solutions, no solution.**
 B. one solution, one solution, infinitely many solutions
 C. infinitely many solutions, one solution, no solution
 D. infinitely many solutions, infinitely many solutions, one solution

Solve for x: $-3(2x + 1) + 3x = 6x + 3$

- A. $\frac{1}{3}$ **B. $-\frac{2}{3}$**
 C. $-\frac{1}{3}$ D. $\frac{2}{3}$

What is the solution to $9x + 11 = 7x + 3x + 5$?

- A. $x = 0$
B. $x = 6$
 C. no solution
 D. infinitely many solutions

What is the solution?

$$3.25x + 1 - 4.25x = -2?$$

- A. -3.0
 B. 0.4
C. 3.0
 D. 4.0

What is the solution to the following equation?

$$\frac{1}{3}n + 5 - 1 = n + 2$$

- A. $n = 3$** B. $n = 2$
 C. $n = -2$ D. $n = -3$

Describe the solution set to the following equation.

$$-2(x - 6) = -2x + 12$$

$$-2x + 12 = -2x + 12$$

$$+2x \quad +2x$$

$$0 + 12 = 0 + 12$$

$$12 = 12$$

inf. sol. (always true!)