

$$11. \text{Var } 5x - 7 = -10x + 8$$

$$\begin{array}{r|l} 5x + 10x & 8 + 7 \end{array}$$

$$\begin{array}{r|l} 15x & 15 \end{array}$$

$$\begin{array}{r|l} 15 & 15 \end{array}$$

$$x = 1$$

$$12. \text{Var } 7y + 3 = 4y - 18 \quad \#$$

$$\begin{array}{r|l} 7y - 4y & -18 - 3 \end{array}$$

$$\begin{array}{r|l} 3y & -21 \end{array}$$

$$\begin{array}{r|l} 3 & 3 \end{array}$$

$$y = -7$$

$$13. -3(y + 3) = 2y + 3$$

$$\begin{array}{r|l} -3y - 9 & 2y + 3 \end{array}$$

$$\begin{array}{r|l} -3y - 2y & 3 + 9 \end{array}$$

$$\begin{array}{r|l} -5y & 12 \end{array}$$

$$\begin{array}{r|l} -5 & -5 \end{array}$$
$$y = -\frac{12}{5}$$

$$14. 2(-3a + 5) = -4(a + 4)$$

$$\begin{array}{r|l} -6a + 10 & -4a - 16 \end{array}$$

$$\begin{array}{r|l} -6a + 4a & -16 - 10 \end{array}$$

$$\begin{array}{r|l} -2a & -26 \end{array}$$

$$\begin{array}{r|l} -2 & -2 \end{array}$$
$$a = 13$$

$$11. \checkmark \quad 5x - 7 = -10x + 8 \quad \neq$$

$$5x + 10x = +8 + 7$$

$$\frac{15x}{15} = \frac{15}{15}$$

$$x = 1$$

$$13. \quad -3(y+3) = 2y+3$$

$$12. \checkmark \quad 7y + 3 = 4y - 18 \quad \neq$$

$$7y - 4y = 18 - 3$$

$$3y = -21$$

$$\frac{3y}{3} = \frac{-21}{3}$$

$$y = -7$$

$$14. \quad 2(-3a+5) = -4(a+4)$$

$$\textcircled{5} \quad -3x - 2 = -x + 4$$

$$\textcircled{6} \quad -10 + 3x = -2x + 20$$

$$\textcircled{7} \quad 3x - 9 = -x + 3$$

$$\textcircled{8} \quad -22 + 3x = -x + 6$$

②

$$4 = \frac{-3x - 2}{-2}$$

~~$$(-2)4 = \frac{-3x - 2}{-2} (-2)$$~~

$$-8 = -3x - 2$$

$$\sqrt{-3x - 2} \neq -8 \quad \#$$

$$-3x = -8 + 2$$

~~$$-3x = -6$$~~

$$\frac{-3x}{-3} = \frac{-6}{-3}$$

$$x = 2$$

④

-11, -7, -6, 11

$$-6x - 5(-2x - 4) = -24$$

$$-6x + 10x + 20 = -24$$

$$\sqrt{4x} \quad \frac{4x + 20}{4} = -24 \quad \#$$

$$4x = -24 - 20$$

~~$$4x = -44$$~~

$$\frac{4x}{4} = \frac{-44}{4}$$

$$x = -11$$

5. $6(2+y) = 3(3-y)$

\checkmark $\frac{12+6y}{6y+3y} = \frac{9-3y}{9}$

$6y+3y = 9-12$

$\frac{9y}{9} = \frac{-3}{9}$

$y = -\frac{1}{3}$

\checkmark 7. $6x-9x-4 = -2x-2$

$\frac{6x-9x}{6x-9x} = \frac{-2x-2+4}{-2x+2}$

$6x-9x = -2x+2$

$-3x = -2x+2$

$-3x+2x = 2$

$\frac{-x}{-1} = \frac{2}{-1}$

$x = -2$

- ① Solution
- ② No Solution
- ③ Many Solutions

\checkmark 6. $4y = 2(y-5) - 2$

$\frac{4y}{4y} = \frac{2y-10-2}{2y-10-2}$

$4y-2y = -10-2$

$\frac{2y}{2} = \frac{-12}{2}$

$y = -6$

How Many Solutions are there?

8. $-2(2x+3) = -4(x+1) - 2$

$\frac{-4x-6}{-4x-6} = \frac{-4x-4-2}{-4x-4-2}$

$-4x-6 = -4x-4-2$

$-4x+4x = -4-2+6$

$0 = 0$

3 solution types

1 solution ($x = ?$)

NO solution \emptyset

infinite solution ∞

$$\begin{array}{r|l}
 \text{var} & \# \\
 \hline
 4. & 2x - x + 7 = x + 3 + 4 \\
 \hline
 & 2x - x \quad | \quad 3 + 4 = 7 \\
 & -x \quad \quad | \quad \quad \quad \\
 \hline
 & 0 = 0
 \end{array}$$

many solutions
 ∞

$$\begin{array}{r|l}
 9. & x + 2x + 7 = 3x - 7 \\
 \hline
 & -3x \quad \quad | \quad -7 \\
 & -2x \quad \quad | \quad \quad \quad \\
 & +2x \quad \quad | \quad \quad \quad \\
 \hline
 & 0 \quad \quad \quad | \quad -14
 \end{array}$$

None

\emptyset

One Solution:

Variables house = One Specific Number

Infinite Solutions:

Variables house = #'s house

No Solutions

Variables house \neq #'s house

