

(Go away) terminate
 Remove - Get rid of - cancel out
 2/3/15

T6-3 Solving Using Elimination

We are going to eliminate by Adding.

$$\begin{array}{r}
 2 + (-2) \\
 -5 + 5 \\
 x + (-x) \\
 -3z + 3z \\
 5y + (-5y)
 \end{array}$$

} = 0 so they were eliminated (opposites)

Additive Inverse

Example 1

$$\begin{array}{r}
 -3x + 4y = 12 \\
 + 3x - 6y = 18 \\
 \hline
 0 - 2y = 30 \\
 -2y = 30 \\
 \hline
 -2 \quad -2 \\
 y = -15
 \end{array}$$

When finished adding you should only have ONE VARIABLE!

1. Find/Make an Inverse
 2. Line up x's, y's & =
 3. Create BIG Addition Problem!
- (Solve, Solve, verify)

Solve

$$\begin{array}{r}
 \text{Solve} \quad -3x + 4(-15) = 12 \\
 -3x - 60 = 12 \\
 \quad +60 \quad +60 \\
 \quad -3x = 72 \\
 \quad \underline{-3} \quad \underline{3} \\
 \quad x = -24
 \end{array}$$

One Solution: $(-24, -15)$ ✓

Verify

$$3(-24) - 6(-15) \stackrel{?}{=} 18$$

Ex 3: Make Your Own Opposites

* Multiply by (-1) to MAKE OPPOSITES

$$\begin{array}{r} \textcircled{-1} \quad 4x + y = 2 \quad \textcircled{-1} \\ \textcircled{-1} \quad 4x + 3y = 10 \\ \hline -4x - y = -2 \quad \textcircled{-1} \\ \hline 2y = 8 \\ \frac{2y}{2} = \frac{8}{2} \end{array}$$

Solve

$$y = 4$$

$$\begin{array}{r} 4x + 4 = 2 \\ -4 = -4 \\ \hline 4x = -2 \\ \frac{4x}{4} = \frac{-2}{4} \end{array}$$

Solve

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

Verify

One Sol: $(-\frac{1}{2}, 4)$ ✓

$$\begin{array}{r} 4(-\frac{1}{2}) + 3(4) \stackrel{?}{=} 10 \\ -2 + 12 = 10 \end{array}$$

Your Turn

$$\begin{array}{l} \textcircled{1} \quad 6x + 2y = 12 \\ 4x + 2y = 8 \end{array}$$

$$\begin{array}{l} \textcircled{2} \quad 7x + 2y = 2 \\ -7x - 2y = -30 \end{array}$$

Homework. Pg 354
#7-17 odd, 25-29 odd

Remember Invisible 1's
 $-IV + IW = 7$
 $IV + IW = 1$