

Good morning!

1. turn in homework
2. have a seat!
3. think: To evaluate $6 - 3x$ at $x = 5$,
what's the first thing you do?
The second?
4. HW Assignment will be:
 - * do practice on notes page 19
 - * do HW Page 12 & HW Page 13

Unit 2 Notes, p17

More Review Of Pre-Algebra, Solving One-Step Equations

Vocabulary

Solution of an Equation- The solution of an equation is the value
(or values) of the variable that makes the equation true.

Inverse Operations- Inverse operations are operations which undo one another. Addition and subtraction are inverse operations.
Multiplication and division are also inverse operations.

Examples: Using Inverse Operations to Solve Equations

a. Solve: $x - 3 = -8$

$$\begin{array}{r|l} +3 & +3 \\ \hline x & = -5 \end{array}$$

step 1 undo -3 by adding 3

b. Solve: $g + 7 = 11$

$$\begin{array}{r|l} -7 & -7 \\ \hline g & = 4 \end{array}$$

step 1 undo $+7$ by sub. 7

c. Solve: $\frac{x}{4} = 9$

$$\begin{array}{r|l} \cdot 4 & \cdot 4 \\ \hline x & = 36 \end{array}$$

step 1 multiply by 4 on both sides

d. Solve: $4c = -96$

$$\begin{array}{r|l} \div 4 & \div 4 \\ \hline c & = -24 \end{array}$$

step 1 div by 4 on both sides

e. Solve: $\frac{2}{3}x = 6$

$$\begin{array}{r|l} \cdot \frac{3}{2} & \cdot \frac{3}{2} \\ \hline x & = 9 \end{array}$$

div by
fraction
mult. by
recip.

$$\frac{3}{\cancel{2}} \cdot \frac{\cancel{2}}{3} x = \frac{6}{1} \cdot \frac{3}{\cancel{2}}$$

$$x = 9$$

step 1 divide both sides by $\frac{2}{3}$

✓ Understanding Check

a. $m + 8 = -6$

b. $p - 2 = -3$

c. $\frac{k}{2} = -5$

d. $-6w = -24$

$$\begin{array}{r} \text{e. } 6 = -5m \\ \underline{-5} \quad \underline{-5} \\ -6 = m \end{array}$$

$$\begin{array}{r} \text{f. } -15 = x - 4 \\ \underline{+4} \quad \underline{+4} \\ -11 = x \end{array}$$

g. $8 = \frac{x}{5}$

$$\begin{array}{r} \text{h. } 4 = \frac{2}{5}x \\ \underline{2/5} \quad \underline{2/5} \end{array}$$

$$\begin{array}{r} 2 \\ \frac{4}{1} \cdot \frac{5}{2} = x \\ 10 = x \end{array}$$



$$\text{e. } -1\frac{1}{5}$$

a. $m = -14$	b. $p = -1$	c. $k = -10$	d. $w = 4$
e. $m = -6/5$	f. $x = -11$	g. $x = 40$	h. $x = 10$

2-1 Solving Two Step Equations

Example 1: Solving Using Reverse PEMDAS

Solve $4x + 2 = 10$

$$\begin{array}{r} -2 \quad -2 \\ 4x = 8 \\ x = 2 \end{array}$$

Step 1 undo +2 by -2
 Step 2 undo mult. 4 by div 4

Check

$$\begin{array}{l} 4(2) + 2 = 10 \\ 8 + 2 = 10 \\ \checkmark 10 = 10 \end{array}$$

Solve $\frac{m}{5} - 3 = 9$

$$\begin{array}{r} +3 \quad +3 \\ \frac{m}{5} = 12 \\ \cdot 5 \quad \cdot 5 \\ m = 60 \end{array}$$

Step 1 undo sub. by add 3
 Step 2 undo div by mult. by 5

Check

$$\begin{array}{l} \frac{60}{5} - 3 = 9 \\ 12 - 3 = 9 \\ 9 = 9 \quad \checkmark \end{array}$$

Example 2: Solving by Multiplying (or dividing) by Negative 1Solve $-m + 6 = -11$

$$\begin{array}{r} -6 \quad -6 \\ -m + 6 = -11 \\ \hline -m = -17 \\ \hline m = 17 \end{array}$$

Step 1 undo +6 by -6
 Step 2 undo mult by -1 by div by -1

Check

$$\begin{array}{l} -(17) + 6 = -11 \\ -17 + 6 = -11 \\ -11 = -11 \\ \checkmark \end{array}$$

Example 3: Solving with a Variable on the Right SideSolve $-5 = 2x - 17$

$$\begin{array}{r} +17 \quad +17 \\ -5 = 2x - 17 \\ \hline 12 = 2x \\ \hline 6 = x \end{array}$$

Step 1 undo -17 by +17
 Step 2 undo mult 2 by div 2

Check

$$\begin{array}{l} -5 = 2(6) - 17 \\ -5 = 12 - 17 \\ -5 = -5 \checkmark \end{array}$$

Example 4: Solving with a Fraction by the VariableSolve $\frac{-2}{3}x - 1 = -9$

$$\begin{array}{r} +1 \quad +1 \\ \frac{-2}{3}x - 1 = -9 \\ \hline \frac{-2}{3}x = -8 \\ \hline x = \frac{-8}{-\frac{2}{3}} \end{array}$$

Step 1 undo sub
 Step 2 undo mult.

Check

$$\begin{array}{l} \frac{-2}{3}(12) - 1 = -9 \\ \frac{-24}{3} - 1 = -9 \\ -8 - 1 = -9 \\ -9 = -9 \checkmark \end{array}$$

$$x = -8 \cdot -\frac{3}{2}$$

$$x = 12$$

✓ Understanding Check

Simplify each expression:

a. $2y - 3 = 7$

b. $\frac{x}{9} - 15 = 12$

c. $-3x + 5 = -7$

d. $-x + 7 = 12$

e. $-a - 5 = -8$

f. $1 = -5c + 11$

g. $-8 = 5m - 7$

h. $\frac{1}{4}p - 3 = -8$

i. $10 = \frac{2}{5}x + 4$

j. $-3w - 6 = 21$

k. $\frac{x}{3} - 5 = -7$

l.* $6 - 5h = -9$

a. $y=5$	b. $x = 243$	c. $x = 4$
d. $x = -5$	e. $a = 3$	f. $c = 2$
g. $m = -1/5$	h. $p = -20$	i. $x = 15$
j. $w = -9$	k. $x = -6$	l. $h = 3$