

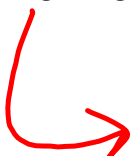
Good morning!

1. turn in homework: HW Page 12 & HW Page 13

2. have a seat!

3. Do: notes page 20 examples a & b

*in
workbook*



Two Step Equations Word Problems

Examples:

Translate to an algebraic equation and solve:

a. Three more than twice a number is fifteen. Find the number.

b. Five less than four times a number is eleven. Find the number.

4. Homework: HW Pages 15, 16, 17 (odds only)



Business:

- * Homework Return
- * Missed class notes
- * Detention reminders

Two Step Equations Word Problems**Examples:**

Translate to an algebraic equation and solve:

- a. Three more than twice a number is fifteen. Find the number.

$$3 + 2x = 15$$

$$2x + 3 = 15$$

$$2x = 12$$

$$x = 6$$

- b. Five less than four times a number is eleven. Find the number.

~~$$5 - 4x = 11$$~~

$$\begin{array}{rcl} 4x - 5 & = & 11 \\ 4x & = & 16 \\ x & = & 4 \end{array}$$

✓ Understanding Check

Translate to an algebraic equation and solve:

- a. Four less than three times a number is fourteen. Find the number.

$$3x - 4 = 14$$

$$x = 6$$

- b. Eight more than twice a number is six. Find the number.

$$8 + 2x = 6 \quad \text{or} \quad 2x + 8 = 6$$

$$x = -1$$

- c. One more than a the quotient of a number and two is five. Find the number.

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

$$\frac{n}{2} = 4$$

$$n = 8$$

- d. Three less than six times a number is negative nine. Find the number.

$$6x - 3 = -9$$

- e. Two more than the product of negative six and a number is twenty. Find the number.

$$-6x + 2 = 20 \quad \text{or} \quad 2 - 6x = 20$$

- f. Three less than the quantity of a number divided by two is four. Find the number.

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

a. $x = 6$	b. $x = -1$
c. $x = 8$	d. $x = -1$
e. $n = -3$	f. $n = 14$

p 21

2-2 Solving Multi-Step Equations

Example 1: Solving Two-Step Equations with Combining Like Terms

Solve each equation:

a. $2c + c + 12 = 78$

$$3c + 12 = 78$$

$$3c = 66$$

$$c = 22$$

Step 1 combine like terms

Step 2 undo +12 by -12

Step 3 undo mult. by div by 3

Check

$$2(22) + 22 + 12 = 78$$

$$44 + 22 + 12 = 78$$

$$66 + 12 = 78$$

$$78 = 78$$

b. $46 = 8p + 16 - 2p$

$$46 = 6p + 16$$

$$30 = 6p$$

$$5 = p$$

Step 1 combine like terms

Step 2 undo +16 by -16

Step 3 undo mult by div by 6

Check

$$46 = 8(5) + 16 - 2(5)$$

$$46 = 40 + 16 - 10$$

$$46 = 46 \checkmark$$

✓ Understanding Check

a. $5x + 7x = 72$

b. $-6y - 3y = 27$

c. $7 = 4m - 2m + 1$

d. $3(k + 8) = 21$

e. $2(x - 3) = 8$

f. $36 = 6(2x - 8)$

g. $9m - 2(2m + 6) = 28$

h. $-5a + 4(2a + 2) = -1$

i. $12 - 3(x - 5) = 21$

pg 22

Practice
those

and these

j. $7y - (3y + 6) = 38$

k. $2(3x + 5) + 3(2x + 5) = 1$

a. $x = 6$	b. $y = -3$	c. $m = 3$
d. $k = -1$	e. $x = 7$	f. $x = 7$
g. $m = 8$	h. $a = -3$	i. $x = 2$
j. $y = 11$	k. $x = -2$	

Sum of Two Number Word Problems p23

Examples

Translate to an algebraic equation and solve:

- a. A larger number is four more than a smaller number. If the sum of the numbers is 20, find the numbers.

$$\text{Lg \# : } x + 4 \rightarrow 12$$

$$\text{Sm \# : } x \rightarrow 8$$

$$2x + 4 = 20$$

$$2x = 16$$

$$x = 8$$

$$\{8, 12\}$$

- b. A first number is six less than twice a second. If the sum of the numbers is 42, find the numbers.

$$1^{\text{st}} : 2x - 6 \rightarrow 26$$

$$2^{\text{nd}} : x \rightarrow 16$$

$$2x - 6 + x = 42$$

$$3x - 6 = 42$$

$$3x = 48$$

$$x = 16$$

$$\{16, 26\}$$

✓ Understanding Check

Translate to an algebraic equation and solve:

- a. A smaller number is five less than a larger number. If the sum of the numbers is 7, find the numbers.

Sm: $x - 5$ $\rightarrow 1$

Lg: x $\rightarrow 6$

$$\begin{aligned} x + x - 5 &= 7 \\ 2x - 5 &= 7 \\ 2x &= 12 \\ x &= 6 \end{aligned}$$

$\{6, 1\}$

- c. A second number is eight more than five times a first number. If the sum of the numbers is 2, find the numbers.

- b. A greater number is seven less than three times a smaller number. If the sum of the numbers is 13, find the numbers.

Sm: x

Lg: $3x - 7$

$$4x - 7 = 13$$

- d. A sailor cut a 55 foot length of rope into two pieces. If the longer piece of rope was five feet less than twice the shorter piece of rope, how long was each piece?

a. $\{6, 1\}$	b. $\{5, 8\}$
c. $\{-1, 3\}$	d. $\{20, 35\}$