

Name: _____ Date: _____

Writing Equations and Inequalities Homework

Lucy has been assigned the following linear equations and inequality word problems. Help her solve each problem below by using a five step plan.

- Drawing a Sketch (if necessary)
- Defining a Variable
- Setting up an equation or inequality
- Solve the equation or inequality
- Make sure you answer the question

1. You are trying to save \$20 a week to buy a new CD player. During the last 4 weeks you have saved \$35, \$15, \$10, and \$12. How much do you need to save this week to average \$20 for the 5 weeks?

I need to save \$28!

$x = \$28$

$$\frac{35 + 15 + 10 + 12 + x}{5} = 20$$

$$72 + x = 100$$

$$\frac{72 + x}{5} = 20$$

2. When 6 is added to four times a number, the result is 50. Find the number.

$$4x + 6 = 50$$

The number is $x = 11$.

3. On an algebra test, the highest grade was 42 points higher than the lowest grade. The sum of the two grades was 138. Find the lowest grade.

is more

$$\begin{cases} H = L + 42 \\ H + L = 138 \end{cases}$$

H = highest
L = lowest

$$L + 42 + L = 138 \quad L = 48$$

4. The sum of 3 consecutive integers is 159. Find the 3 numbers.

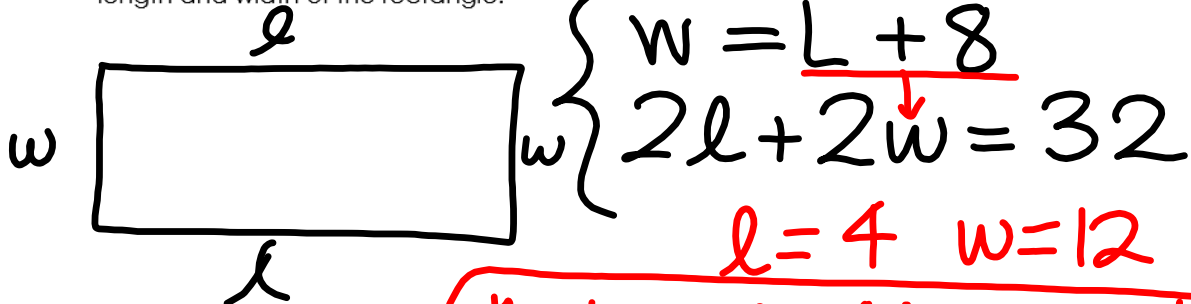
$$x + x + 1 + x + 2 = 159$$

$$3x + 3 = 159 \quad x = 52$$

The lowest grade is 48.

The 3 integers are 52, 53, 54.

5. The width of a rectangle is 8 inches more than the length. The perimeter is 32. Find the length and width of the rectangle.



The length is 4 inches and width is 12 inches.

6. Three times the sum of a number and negative two is negative fifteen. Find the number.

The number is -3. $x = -3$

$$3(x + -2) = -15$$

$$3x + 6 = -15$$

$$3x = -21$$

$$x = -7$$

3x + 6 = -15
+6
3x = -21

7. Five times the sum of a number and two is thirty-five. Find the number.

$$5(x + 2) = 35$$

$$x = 5$$

The number is 5.

8. Twelve subtracted from three times a number is fifteen. Find the number.

$$3x - 12 = 15$$

$$x = 9$$

9 is the number

9. Twice a number added to seven is thirteen.

$$2x + 7 = 13$$

$$x = 3$$

The number is 3.