

Warm Up:

9/4/18

$$\begin{aligned} 1. \quad & -4(2x + 3) - (x + 3) = -60 \\ & \boxed{-8x} - \boxed{12} - \boxed{x} - \boxed{3} = -60 \\ & -9x - 15 = -60 \\ & \quad \quad \quad +15 \quad +15 \\ & \hline & -9x = -45 \\ & \quad \quad \quad -9 \quad \quad -9 \\ & \boxed{x = 5} \end{aligned}$$

$$\begin{aligned} 2. \quad & 5x - 13 + 7 = 7x + 8 - 2x \\ & \cancel{5x} - 6 = \cancel{5x} + 8 \\ & \quad \quad \quad +5x \quad \quad -5x \\ & \hline & -6 = 8 \\ & \boxed{\emptyset} \end{aligned}$$

$$\begin{aligned} 3. \quad & \frac{2}{3}x - \frac{1}{6} = \frac{1}{2}x + \frac{5}{6} \\ & 4x - 1 = 3x + 5 \\ & \quad \quad \quad -3x \quad \quad -3x \\ & \hline & x - 1 = 5 \\ & \quad \quad \quad +1 \quad +1 \\ & \boxed{x = 6} \end{aligned}$$

Translate and solve:

4. three more than 4 times a number is negative forty five

$$\begin{aligned} & 3 + 4x = -45 \\ & \quad \quad \quad -3 \\ & \hline & 4x = -48 \\ & \quad \quad \quad \frac{4}{4} \quad \quad \frac{-48}{4} \\ & \boxed{x = -12} \end{aligned}$$

TEST AVERAGE Questions

1. Find the sum of the current grades
2. Add the unknown grade to the sum
3. Set the answer from #2 divided by the number of tests equal to the desired average
4. Solve

Sally wants a test average of 93 in class. If she scored an 82, 83, 97, and 85 on her first four tests. What must she score on the fifth test to accomplish her goal?

$$82 + 83 + 97 + 85$$

$$\frac{347 + X}{5} = 93$$

$$\begin{array}{r} 347 + X = 465 \\ - 347 \quad - 347 \end{array}$$

$$X = 118$$

Sam wants a test average of 80 in class. If he scored an 93, 64, and 79 on his first three tests, what must he score on the fourth test to accomplish his goal?

$$93 + 64 + 79$$

$$(4) \frac{236 + X}{4} = 80 (4)$$

$$\begin{array}{r} 236 + X = 320 \\ -236 \quad -236 \\ \hline \end{array}$$

$$X = 84\%$$

type 1: Finding Two Numbers

1. The larger of two numbers is four more than the smaller number. If the sum of the numbers is 74, find the numbers.

$x = \text{smaller \#}$ $\boxed{35}$
 $x+4 = \text{larger \#}$ $\boxed{39}$

$$\begin{aligned} (x) + (x+4) &= 74 \\ 2x + 4 &= 74 \\ \underline{-4 \quad -4} & \\ 2x &= 70 \\ x &= 35 \end{aligned}$$

2. The larger of two numbers is six less than twice the smaller number. If the sum of the numbers is 42, find the numbers.

$x = \text{smaller \#}$ $\boxed{16}$
 $2x-6 = \text{larger \#}$ $\boxed{26}$

$$\begin{aligned} (x) + (2x-6) &= 42 \\ 3x - 6 &= 42 \\ \underline{+6 \quad +6} & \\ 3x &= 48 \\ \underline{3 \quad 3} & \\ x &= 16 \end{aligned}$$

type 2: Perimeter of Rectangles

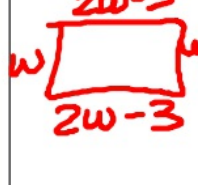
5. The length of a rectangle is six inches more than its width. If the perimeter of the rectangle is 24 inches, find its dimensions.

$w+6$
 w  $w+6$
 $w = \text{width } 3 \text{ in.}$
 $w+6 = \text{length } 9 \text{ in.}$

$$\begin{aligned}
 4w + 12 &= 24 \\
 -12 &\quad -12 \\
 \hline
 4w &= 12 \\
 \frac{4w}{4} &= \frac{12}{4} \quad w = 3
 \end{aligned}$$

6. The length of a rectangle is five inches more than four times its width. If the perimeter of the rectangle is 90 inches, find its dimensions.

7. The length of a rectangle is three centimeters less than twice its width. If the perimeter of the rectangle is 18 centimeters, find its dimensions.

$2w-3$
 w  $2w-3$
 $w = \text{width } 4 \text{ cm}$
 $2w-3 = \text{length } 5 \text{ cm}$

$$\begin{aligned}
 6w - 6 &= 18 \\
 +6 &\quad +6 \\
 \hline
 6w &= 24 \\
 \frac{6w}{6} &= \frac{24}{6} \quad w = 4
 \end{aligned}$$

type 3 Finding Consecutive Numbers

- What does consecutive mean? in order
- Give examples of the following:

consecutive numbers $x, x+1, x+2, x+3$	4, 5, 6, 7, 8
consecutive <u>even</u> numbers $x, x+2, x+4, x+6$	6, 8, 10, 12
consecutive <u>odd</u> numbers $x, x+2, x+4, x+6$	3, 5, 7, 9

10. The sum of two consecutive numbers is 123. Find the numbers.

$$x = 1^{\text{st}} \#$$

$$x+1 = 2^{\text{nd}} \#$$

61
62

$$(x) + (x+1) = 123$$

$$2x + 1 = 123$$

$$\begin{array}{r} \underline{-1} \quad \underline{-1} \\ 2x = 122 \end{array} \quad x = 61$$

11. The sum of two consecutive numbers is 85, find the numbers.

12. Find two consecutive **even** numbers whose sum is 54.

$$\begin{array}{l} x = 1^{\text{st}} \# \quad \boxed{26} \\ x+2 = 2^{\text{nd}} \# \quad \boxed{28} \end{array} \quad \begin{array}{l} (x) + (x+2) = 54 \\ 2x + 2 = 54 \\ \underline{2x} = \underline{52} \\ \underline{\quad} \quad \underline{\quad} \\ x = 26 \end{array}$$

13. The sum of two consecutive **odd** numbers is 128. Find the numbers.