

Name: _____

Date: _____

Pre-Algebra – Simplifying Expressions and Solving Equations Review

AIM: How can we review for our equations test?

<p>1. $\left(\frac{5}{2}\right) \frac{2}{3} x = \frac{20}{1} \left(\frac{5}{21}\right)$</p> $\boxed{x=50}$	<p>2. $-2(3x-10) + 6(2x+1) = 56$</p> $-6x + 20 + 12x + 6 = 56$ $6x + 26 = 56$ $\begin{array}{r} 6x + 26 = 56 \\ -26 \quad -26 \\ \hline 6x = 30 \\ \frac{6x}{6} = \frac{30}{6} \\ \boxed{x=5} \end{array}$
<p>3. $2(x-10) = 3x + 3x + 8$</p> $\begin{array}{r} 2x - 20 = 6x + 8 \\ -2x \quad -2x \\ \hline -20 = 4x + 8 \\ -8 \quad -8 \\ \hline -28 = 4x \\ \frac{-28}{4} = \frac{4x}{4} \\ \boxed{-7=x} \end{array}$	<p>4. $9 - (4x + 5) = 12$</p> $9 - 4x - 5 = 12$ $-4x + 4 = 12$ $\begin{array}{r} -4x + 4 = 12 \\ -4 \quad -4 \\ \hline -4x = 8 \\ \frac{-4x}{-4} = \frac{8}{-4} \\ \boxed{x=-2} \end{array}$
<p>5. $4(6x-2) = 16x + 8$</p> $24x - 8 = 16x + 8$ $24x - 8 = 16x + 8$ $\begin{array}{r} 24x - 8 = 16x + 8 \\ -16x \quad -16x \\ \hline 8x - 8 = 8 \\ +8 \quad +8 \\ \hline 8x = 16 \\ \frac{8x}{8} = \frac{16}{8} \\ \boxed{x=2} \end{array}$	<p>Check for #5</p> $4(6x-2) = 16x + 8$ $4(6(2)-2) = 16(2) + 8$ $4(12-2) = 32 + 8$ $4(10) = 40$ $40 = 40 \checkmark$

6.) a.) The area of the given rectangle is 60 square units. Find x.

$$4(2x+3) = 60$$

$$8x + 12 = 60$$

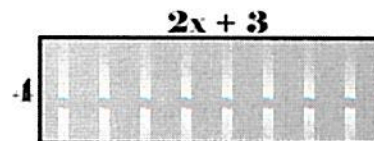
$$8x = 48$$

$$\boxed{x=6}$$

b.) What is the length of the rectangle?

$$2(6) + 3$$

$$\boxed{15}$$



7.) The perimeter of the rectangle above is 62 units. Find x.

$$4 + 4 + 2x + 3 + 2x + 3 = 62$$

$$4x + 14 = 62$$

$$4x = 48$$

$$\boxed{x=12}$$

8.) Find three consecutive integers whose sum is 246.

81	$x = 1^{\text{st}}$ con. int
82	$x+1 = 2^{\text{nd}}$ con. int
83	$x+2 = 3^{\text{rd}}$ con. int

$$x + x + 1 + x + 2 = 246$$

$$3x + 3 = 246$$

$$3x = 243$$

$$x = 81$$

9.) If x is the first consecutive even integer, what is the fourth consecutive even integer?

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

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

$$x+4 = 3^{\text{rd}}$$

$$x+6 = 4^{\text{th}}$$

$x+6$

Word Problem Applications

For each problem, (i) define your variable, (ii) write your equation, (iii) solve, (iv) write answer

14.) Translate into an equation and solve: Seven less than two times a number is 93.

$$x = \text{a \#}$$

$$2x - 7 = 93$$

$$2x = 100$$

$x = 50$

15.) Will rented a bike from the bike store.

- He spends \$5 per hour.
- The initial fee of the bike is \$18.
- He spends a total of \$48.

For how many hours did he rent the bike? Write an equation and solve.

$$h = \text{\# hours}$$

$$5h + 18 = 48$$

$$5h = 30$$

$h = 6$

He rented for 6 hours

17.) Bill has \$120 and is earning \$10 per day. John has \$150 and is earning \$4 per day. In how many days, d , will both Bill and John have the same amount of money?

$$d = \text{\# days}$$

$$\begin{array}{r} 10d + 120 = 4d + 150 \\ -4d \qquad \qquad -4d \\ \hline 6d + 120 = 150 \\ 6d = 30 \\ d = 5 \end{array}$$

At 5 days, Bill & John have the same amount

18.) Helen needs to rent a moving truck. Company A charges a rate of \$20 plus \$40 per day and Company B charges \$60 plus \$20 per day. For what number of days is the cost the same?

$$d = \text{\# days}$$

$$\begin{array}{r} 40d + 20 = 20d + 60 \\ -20d \qquad \qquad -20d \\ \hline 20d + 20 = 60 \end{array}$$

$$20d + 20 = 60$$

$$20d = 40$$

$$d = 2$$

At 2 days, the cost is the same

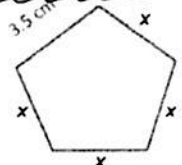
19.) The perimeter of the following pentagon is 15.5cm. If one side of the pentagon measures 3.5cm then find the value of the variable, x .

$$x + x + x + x + 3.5 = 15.5$$

$$4x + 3.5 = 15.5$$

$$4x = 12$$

$x = 3$



four sides measure 3cm