Unit 2: Equations Review Packet Name _____

Test Date: Thurs. Oct. 13 and Fri. Oct 14

Sole and Check the following equations

$\frac{c}{5} - 4 = -3$	**Check**
$-2q - 5 = -11$	**Check**
$\frac{x}{6} - 2 = \frac{5}{12}$	**Check**

$4(a+6)=96$	**Check**
$0.5t-3t+5=0$	**Check**
$\frac{2}{3}x-\frac{5}{8}x=26$	**Check**

$4n+67=6n-3$	**Check**
$5w-15-2w=w+27$	**Check**

Write and Solve an Equation to answer the question

1. A town has accumulated 2 inches of snow, and the snow depth is increasing by 4 inches every hour. A nearby town has accumulated 7 inches, and the depth is increasing by 2 inches every hour. In about how many hours will the snowfall of the towns be equal?

2. The length of a rectangular garden is 3 yards more than twice its width. The perimeter of the garden is 36 yards. What are the width and length?

3. An athlete runs an equal distance 5 days a week. The other 2 days of the week, she runs a total of 13 miles. Write an equation to represent the total numbers of miles run in a week, R, and the number of miles, x, run each of the 5 days. If the athlete ran 53 miles last week, how far did she run each of the first 5 days?

4. Peter has to use the following information to find the original number: "If you double a number and then add 36, you get $\frac{4}{11}$ of the original number." Write and solve an equation to find the original number.

5. The sum of 2 consecutive numbers is 113. Find the numbers

Matching:
Classify the following equations as having One, None, or Infinitely Many Solutions.

_____1. $x-(4-x)=0$

_____2. $3(2t-6)=2(3t-9)$

_____3. $3(5x-2)-6x=3(3x+2)$

_____4. $9x+13=5x-7+4x$

_____5. $4n-6n=2n$

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N: No Solution

O: One Solution

I: Infinitely Many Solutions

Unit 2: Equations Review Packet Name Key

Test Date: Thurs. Oct. 13 and Fri. Oct 14

Sole and Check the following equations

$\frac{c}{5} - 4 = -3$

$+4 \quad +4$

$5 \cdot \frac{c}{5} = 1 \cdot 5$

$c = 5$

Check

F: $\frac{c}{5} - 4 = -3$

S: $\frac{5}{5} - 4 = -3$

S: $1 - 4 = -3$

$-3 = -3$ ✓

$-2q - 5 = -11$

$+5 \quad +5$

$\frac{-2q}{-2} = \frac{-6}{-2}$

$q = 3$

Check

F: $-2q - 5 = -11$

S: $-2(3) - 5 = -11$

S: $-6 - 5 = -11$

$-11 = -11$ ✓

$\frac{x}{6} - 2 = \frac{5}{12}$

$+2 \quad +2$

$6 \cdot \frac{x}{6} = 2\frac{5}{12} \cdot 6$

$\frac{29}{12} \cdot \frac{6^{1}}{1} = \frac{29}{2}$

$x = 14\frac{1}{2}$

Check

F: $\frac{x}{6} - 2 = \frac{5}{12}$

S: $\frac{14\frac{1}{2}}{6} - 2 = \frac{5}{12}$

$\frac{29}{12} - \frac{24}{12} = \frac{5}{12}$

$\frac{5}{12} = \frac{5}{12}$ ✓

$14\frac{1}{2} \div 6$

$\frac{29}{2} \cdot \frac{1}{6}$

$\frac{29}{12}$

$4(a+6)=96$

$4a+24=96$

$-24 \quad -24$

$\frac{4a}{4}=\frac{72}{4}$

$\boxed{a=18}$

Check

F: $4(a+6)=96$

S: $4(18+6)=96$

S: $4(24)=96$

$96=96$ ✓

$0.5t-3t+5=0$

$-2.5t+5=0$

$-5 \quad -5$

$\frac{-2.5t}{-2.5}=\frac{-5}{-2.5}$

$\boxed{t=2}$

Check

F: $0.5t-3t+5=0$

S: $0.5(2)-3(2)+5=0$

$1-6+5=0$

S: $-5+5=0$

$0=0$ ✓

$\frac{2}{3}x-\frac{5}{8}x=26$

$\frac{16}{24}x-\frac{15}{24}x=26$

$\frac{24}{1}\cdot\frac{1}{24}x=26\cdot\frac{24}{1}$

$\boxed{x=624}$

Check

F: $\frac{2}{3}x-\frac{5}{8}x=26$

$\frac{2}{3}\cdot\frac{624}{1}-\frac{5}{8}\cdot\frac{624}{1}=26$

$416-390=26$

$26=26$ ✓

$4n+67=6n-3$

$-4n \quad -4n$

$67 = 2n - 3$

$+3 \quad +3$

$\frac{70}{2} = \frac{2n}{2}$

$35 = n$

Check

F: $4n+67=6n-3$

S: $4(35)+67=6(35)-3$

$140+67=210-3$

S: $207 = 207$ ✓

$5w-15-2w=w+27$

$3w-15=w+27$

$-w \quad -w$

$2w-15=27$

$+15 \quad +15$

$\frac{2w}{2}=\frac{42}{2}$

$w=21$

Check

F: $5w-15-2w=w+27$

S: $5(21)-15-2(21)=21+27$

S: $105-15-42=21+27$

$48 = 48$ ✓

Write and Solve an Equation to answer the question

1. A town has accumulated 2 inches of snow, and the snow depth is increasing by 4 inches every hour. A nearby town has accumulated 7 inches, and the depth is increasing by 2 inches every hour. In about how many hours will the snowfall of the towns be equal?

Town A = Town B

Let h = hours until Snowfall is =

$2+4h = 7+2h$

$-2 \quad -2$

$4h = 5+2h$

$-2h \quad -2h$

$\frac{2h}{2}=\frac{5}{2}$

$h = 2.5$

2.5 hours the Snowfall will be the same

2. The length of a rectangular garden is 3 yards more than twice its width. The perimeter of the garden is 36 yards. What are the width and length?

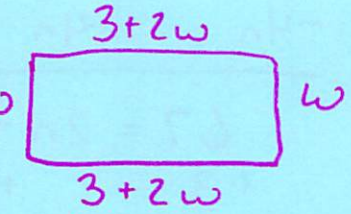
$3+2w+w+3+2w+w=36$

$6w+6=36$

$-6 \quad -6$

$\frac{6w}{6} = \frac{30}{6}$

$w=5$



Width = 5 yds

Length = 13 yds

3. An athlete runs an equal distance 5 days a week. The other 2 days of the week, she runs a total of 13 miles. Write an equation to represent the total numbers of miles run in a week, R, and the number of miles, x, run each of the 5 days. If the athlete ran 53 miles last week, how far did she run each of the first 5 days?

Let R = Total miles in the week

Let x = # of miles run each of the 5 days

$R = 5x + 13$

$53 = 5x + 13$

$-13 \quad -13$

$\frac{40}{5} = \frac{5x}{5}$

$8 = x$

The athlete ran 8 miles each of the 5 days

4. Peter has to use the following information to find the original number: "If you double a number and then add 36, you get $\frac{4}{11}$ of the original number." Write and solve an equation to find the original number.

Let x = Peter's #

$\frac{11}{1}(2x+36) = \left(\frac{4}{11}x\right)\frac{11}{1}$

$22x + 396 = 4x$

$-22x \quad -22x$

$\frac{396}{-18} = \frac{-18x}{-18}$

$-22 = x$

Peter's number is -22

5. The sum of 2 consecutive numbers is 113. Find the numbers

Let x be 1st #

Let $x+1$ be 2nd #

$$x + x + 1 = 113$$

$$2x + 1 = 113$$

$$-1 \quad -1$$

$$\frac{2x}{2} = \frac{112}{2}$$

$$x = 56$$

The 2 consecutive #'s are 56 and 57

Matching:
Classify the following equations as having One, None, or Infinitely Many Solutions.

N 1. $x-(4-x)=0$

$x-4+x=0$

$-4 \neq 0$

I 2. $3(2t-6)=2(3t-9)$

$6t-18=6t-18$

N 3. $3(5x-2)-6x=3(3x+2)$

$15x-6-6x=9x+6$

$9x-6=9x+6$

$-9x \quad -9x$

$-6 \neq 6$

N 4. $9x+13=5x-7+4x$

$9x+13=9x-7$

$-9x \quad -9x$

$13 \neq -7$

O 5. $4n-6n=2n$

$-2n \quad -2n$

$+2n \quad +2n$

$\frac{0}{4} = \frac{4n}{4}$ $0=n$

N: No Solution

O: One Solution

I: Infinitely Many Solutions