Word Problem Test (In Class) **Name_____Key_____**

Solve each Problem. Show all work on test.

Problem 1. Larry is eight years older than Moe. Curly is three times as old as Moe. **Five years ago**, the sum of Larry's and Moe's age was four less than Curly's age. **What is their present ages**.

Names	Ages	**– 5 yrs**
Larry	**m + 8**	**m + 3**
Curly	**3m**	**3m – 5**
Moe	**m**	**m – 5**

Larry + Moe = Curly – 4

$m + 3 + m - 5 = 3m - 5 - 4$

$2m - 2 = 3m - 9$

$-2 + 9 = 3m - 2m$

$7 = m$

Larry = 15

Curly = 21

Moe = 7

Problem 2. Find three **consecutive odd integers** so that five times the second, decreased by twice the third, is 11 more than twice the first. **Find the integers**.

First: 2n + 1
Second: 2n + 3
Third: 2n + 5

5 (Second) – 2 (Third) = 2 (First) + 11

$5(2n + 3) - 2(2n + 5) = 2(2n + 1) + 11$

$10n + 15 - 4n - 10 = 4n + 2 + 11$

$6n + 5 = 4n + 13$

$6n - 4n = 13 - 5$

$2n = 8$

$n = 4$

First= 9

Second = 11

Third = 13

Problem 3. Pixie dust worth \$1.80/g is mixed with leprechaun gold worth \$2.10/g to make a 100g mixture of magical treasure worth \$190.50. **How many grams of each ingredient are used?**

Ingredients	Amount (g)	Price \$	Total
Pixie Dust	**x**	**1.80**	**1.80x**
Leprechaun Gold	**100 – x**	**2.10**	**210 –2.10x**
Treasure	**100**		**190.50**

Total Pixie Dust + Total Leprechaun Gold = Total Treasure

$$1.80x + 210 - 2.10x = 190.50$$
$$-.30x + 210 = 190.50$$
$$-.30x = 190.50 - 210$$
$$-.30x = -19.5$$
$$\frac{-.30x}{-.30} = \frac{-19.5}{-.30}$$
$$x = 65$$

Pixie Dust = 65g

Lep. Gold = 35g

Problem 4. Mike has some pennies, nickels, dimes, and quarters worth \$3.47. There is one more dime than three times the number of pennies. There are four more quarters than dimes. There are four less nickels than twice the number of pennies. **How many of each type of coin did Mike have?.**

Coins	Amount # coin	Value ¢	Total Value
Pennies	**p**	1	**p**
Nickels	**2p –4**	5	**10p – 20**
Dimes	**3p + 1**	10	**30p + 10**
Quarters	**3p +5**	25	**75p + 125**
Total			**347**

Total (P + N + D + Q) = Total Value

$$116p + 115 = 347$$
$$116p = 347 - 115$$
$$116p = 232$$
$$p = 2$$

Pennies = 2
Nickels = 0
Dimes = 7
Quarters = 11

Problem 5. Ground chuck sells for $1.75 per pound. **How many pounds of ground round** selling for $2.45 per pound should be mixed with 20 pounds of ground chuck to obtain a mixture that sells for $2.05 per pound?

Ingredients	Amount (lbs)	Price $	Total Value
Ground Chuck	**20**	**1.75**	**35.00**
Ground Round	**x**	**2.45**	**2.45x**
Mixture	**x + 20**	**2.05**	**2.05x + 41.00**

Total Chuck + Total Round = Total Mixture

$$35.00 + 2.45x = 2.05x + 41.00$$
$$2.45x - 2.05x = 41 - 35$$
$$.40x = 6.00$$
$$\frac{.40x}{.40} = \frac{6.00}{.40}$$
$$x = 15$$

15 lbs ground round

Problem 6. Five pounds of milk chocolate that sells for $3.00/lbs and some magic beans worth $6.00/lbs are mixed to make some really neat treat worth $4.75/lbs. **Find how many lbs of magic beans are needed to make the mixture?**

Ingredients	Amount (lbs)	Price $	Total Value
Milk Chocolate	**5**	**3.00**	**15.00**
Magic Beans	**x**	**6.00**	**6.00x**
Neat Treat	**x + 5**	**4.75**	**4.75x + 23.75**

Total Chocolate + Total Beans = Total Treat

$$15 + 6x = 4.75x + 23.75$$
$$6x - 4.75x = 23.75 - 15$$
$$1.25x = 8.75$$
$$\frac{1.25x}{1.25} = \frac{8.75}{1.25}$$
$$x = 7$$

Magic Beeans = 7 lbs

Problem 7. Cory has a collection of pennies, nickels, dimes, and quarters. There is one more nickel than twice the number of dimes. There are two more pennies than twice the number of quarters. Finally there four less quarters than three times the number of dimes. If you take the expressions found for the **total value** of the collection (in terms of cents) that would be **equal** to thirteen more than seven times the **total number of coins** in the collection. **Find the value of all the coins in the collection.**

Coins	Amount # coin	Value ¢	Total Value
Pennies	**6d – 6**	1	**6d – 6**
Nickels	**2d + 1**	5	**10d + 5**
Dimes	**d**	10	**10d**
Quarters	**3d – 4**	25	**75d + 100**
Total	**12d – 9**		**101d – 101**

Total Value = 7 [Total # coins] + 13

$$101d - 101 = 7[12d - 9] + 13$$
$$101d - 101 = 84d - 63 + 13$$
$$101d - 101 = 84d - 50$$
$$101d - 84d = -50 + 101$$
$$17d = 51$$
$$d = 3$$

$$101(3) - 101 = 202$$

Total Value = $2.02

Problem 8. The sum of three numbers is forty two. The second number is twice the first number and the third number is three less than the second number. Find the three numbers.

One: x
Other 2x
Another: 2x – 3
42

(One) + (Other) + (Another) = 42

$$x + 2x + 2x - 3 = 42$$
$$5x - 3 = 42$$
$$5x = 42 + 3$$
$$5x = 45$$
$$x = 9$$

One = 9
Other = 18
Another = 15

Problem 9. Twenty increased by five times the sum of a number and two, is the same as six decreased by three times the number. What is the number?

Number: x

$20 + 5(x + 2) = 6 - 3x$

$20 + 5(x + 2) = 6 - 3x$

$20 + 5x + 10 = 6 - 3x$

$30 + 5x = 6 - 3x$

$5x + 3x = 6 - 30$

$8x = -24$

$x = -3$

Number = –3

Problem 10. Twice a number increased by twelve is thirty one less than three times the number. Find the number.

Number: n

$2n + 12 = 3n - 31$

$2n + 12 = 3n - 31$

$12 + 31 = 3n - 2n$

$43 = n$

Number = 43