***EQ: How do we solve system of equations word problems?***

**Warm-Up:** Solve the following system of equation using the substitution method. Show all of your work.

*x* = *y* – 2

*y* = 10 – 3*x*

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The Happy Faces Middle School Math Club sold gift wrap to earn money for a upcoming math competition. The total number of rolls sold was 480. The gift wrap in solid colors sold for $4.00 per roll, and the print gift wrap sold for $6.00 per roll. The total amount of money collected was $2340.

How many rolls of each kind of gift wrap were sold?

Let’s do this!

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| 1) What are the unknowns in the word problem? |
| 2) Assign each unknown a variable  Let’s make:  ***x:******\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ y: ­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*** |
| 3) Using **x** and **y**  ***Translate (make an equation)***: The total number of rolls sold was 480 |
| 4) ***Translate (make an equation):*** The gift wrap in solid colors sold for $4.00 per roll, and the print gift wrap sold for $6.00 per roll. The total amount of money collected was $2340. |
| 5)Put both equations together and solve the system: |

**Try these below!**

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| 1. Gina and Tonya both played Pac- Man at the arcade. The difference between Gina’s score and Tonya’s score is 3 points. Four times Tonya’s score plus Gina’s score is 7 points. Find Gina’s score and Tonya’s score |
| 1. Steven is 7 years younger than 3 times Jane’s age. The difference between 6 times Steven’s age and Jane’s age is 9 years. How old is Steven and Jane? |
| 1. When Dale baby-sat for 8 hours and worked at a restaurant for 3 hours, he made a total of $58. When he baby-sat for 2 hours and worked at a restaurant for 5 hours, he made a total of $40. How much does Dale get paid for each type of work? |
| 1. Find the value of two numbers if their sum is 12 and their difference is 4. |

***Systems of Equations Word Problems Homework***

*Directions: Solve and CHECK each problem below*

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| 1) The difference of two numbers is 3. Their sum is 13. Find the numbers | 2) A landscaping company placed two orders with a nursery. The first order was for 13 bushes and 4 trees, and totaled $487. The second order was for 3 bushes and 1 tree, and totaled $116. The bills do not list the per-item price. What were the costs of one bush and of one tree? |
| 3) The senior classes at Hauppauge HS and Smithtown HS planned separate trips to NYC. Hauppauge HS rented 1 van and 6 buses for 372 students. Smithtown HS rented 4 vans and 12 buses for 780 students. How many students can a van carry? How many students can a bus carry? | 4) Hauppauge Middle School is selling tickets to a spring musical. On the first day school sold 1 senior citizen ticket and 3 child tickets for a total of $25. The school earned $67 dollars on the second day by selling 8 senior citizen tickets and 5 child tickets. What was the price for one senior citizen ticket and one child ticket? |
| 1. The difference of two numbers is 3. Their sum is 13. Find the numbers. | 1. Candy Mixtures. A bulk wholesaler wishes to mix some candy worth $.45 per pound and some worth $.80 per pound to make 350 lb. of a mixture worth $.65 per pound. How much of each type of candy should be used? |