Name _____ Date _____

Systems of Linear Equations – Word Problems

5-Step Plan:
1. Define variables, quantities, and units.
2. Write the system of equations.
3. Solve using one method (graphing, elimination, substitution).
4. Check your answer (using another method).
5. State your solution in sentence form

Solve each problem using what you know about graphing lines and inequalities and rely on your mathematical reasoning. Every final answer must have a unit. Work must be shown on your poster. Each group member should talk during the presentation and Gallery Walk.

To Complete the assignment your group will solve 2 problems around a single theme and application. Then you will prepare to answer questions from your teachers and peers about your solution. Your Points Goal for the Rubric is 7/7.

	1	2	3
MATH:	Yay! You tried! You have some errors in your work, but some good stuff, too, and you didn't give up.	Oops! Small mistake! Your procedures are a good plan, but you made a small computational mistake.	Perfect! (I got nuthin' to say)
POSTER:	Missing work/Super Messy. If I hung this up, it wouldn't be helpful to another classmate as a student work of math-art.	Nice! If I hung this up as an example, people could learn from this clear and well-organized math poster.	Wow! We should try to sell this! It teaches math AND looks cool.
PRESENTATION:	Huh? We can't hear you or we are very confused.	Ok. I like this…but I disagree on some things.	Ok. I agree. Good math-ing!

Athletes and Sports Enthusiasts:

1. You are trying to sell tickets for the school's big basketball game against our longtime rivals! Ticket prices are $6 for adults and $4 for children. Write an equation that represents the total sales, T, using *a* and *c* to represent different ticket types.

    a. How much would you earn if you sold 10 adult tickets and 11 children's tickets?

    b. How much would you earn if you sold 16 adult tickets and 5 children's tickets?

    c. Re-rewrite the expression by solving for a

2. You sold 21 tickets to the game. Good work!

    a. After selling 21 tickets, you collected $104. How many adult tickets and how many children tickets did you sell?

    b. Is it possible that you sold 11 adult tickets and 10 children's tickets? Why or why not?

Car Experts and Auto Aficionados:

3. You are buying parts for your classic 57 Mustang Fastback. A spark plug costs $1.60 and spark plug wire cost $5 per bundle. How many car repair items did you buy? Write an equation that represents the total cost, C, using *p* for spark plugs and *w* to represent wire.

    a. How much would you spend if you bought 10 spark plugs and 11 bundles of wire?

    b. How much would you spend if you bought 5 spark plugs and 6 bundles of wire?

    c. Rewrite the expression, solving for p.

4. You bought 8 car parts. Your classic car will be road-worthy in no time.

    a. After buying 8 parts, you spent $23. How many spark plugs and how many wire bundles did you buy?

    b. Is it possible that you bought 5 wire bundles and 3 spark plugs? Why or why not?

World Travelers and Globetrotters:

5. Beach Hotel in Cancun is offering a weekend special. The package includes a 2-night stay with 3 meals.

    a. If it costs $20 per meal and $60 per night, how much would you pay for the package?

    b. If it costs $10 per meal and $70 per night, how much would you pay for the package?

    c. Rewrite the equation by solving for m.

6. Beach Hotel in Cozumel is offering a weekend special, too. The package includes a 3-night stay with 5 meals.

    a. The package in Cancun costs $195 and the package in Cozumel costs $300. What is the cost of a single meal? What is the cost of a single night's stay?

    b. Is it possible that you paid 75 dollars for each meal? Explain.

Animal Lovers:

7. You have a part-time job at a local animal shelter. Young puppies eat kibble that costs $14.80 per week and older dogs eat $17 worth of food per week. Write an equation that represents the total cost, C, of feeding the animals. Use *d for dogs* and p for puppies to represent the animals in your care.

    a. How much would you spend if you bought food for 4 dogs and 2 puppies?

    b. How much would you spend if you bought food for 5 puppies and 1 dog?

    c. Rewrite the equation by solving for p.

8. There are 6 dogs in your care. Aren't they so cute?

    a. After feeding 6 animals for a week, you spent $91. How many dogs and how many puppies did you feed?

    b. Is it possible that you bought food for 1 puppy and 5 dogs?

Make-up Lovers <3:

9. Rachel buys 3 lipstick and 2 kinds of eyeliners. Write an equation for Cost, C, where x represents the cost of eyeliners and y represents the cost of lipstick.

    a. How much would Rachel spend if lipstick was $7 and Eyeliners were $5?

    b. How much would Rachel spend if lipstick was $5 and Eyeliners were $7?

    c. Re-write the equation by solving for x or y.

10. Rachel told her friend Casey that she got a great deal and only spent $29.50, so Casey went shopping, too. She bought 2 lipsticks and 3 eyeliners and spent $23.

    a. How much does a lipstick cost?

    b. Is it possible that a lipstick costs $2? Why or why not?

Gamers:

11. Nick invited his friends over to play Call of Duty and Overwatch. For the gaming party, he buys 3 pizzas and 2 orders of breadsticks. Write an equation for Cost, C, where x represents the cost of pizzas and y represents the cost of breadsticks.

    a. How much would Nick spend if pizza was $7 and breadsticks were $3?

    b. How much would Nick spend if pizza was $5 and breadsticks were $2?

    c. Re-write the equation by solving for x or y.

12. Nick told his friend Daivon that he got a great deal and only spent $29.50. So, the next time they met up to play games, he bought food, too. He bought 2 pizzas and 3 breadsticks and spent $23.

    a. How much does pizza cost?

    b. Is it possible that a pizza costs $2? Why or why not?