Algebra 2

Word Problem

Name: _____

Date: _____ Period: ____

Applications of Linear Systems

_____

Learning Target: Students will be able to interpret word problems to write and solve systems of equations.

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Steps:
1. Define <u>two</u> variables. Be specific about the quantity they represent.
2. Write a system of <u>two equations</u>.
3. Solve the system using substitution or elimination.
4. Use units to label both answers and check to make sure the answers make sense!

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Set up a system of equations and solve.

1.) The Rocket Coaster has 15 cars, some that hold 4 people and some that hold 6 people. There is room for 72 people altogether. How many 4-passenger cars are there? How many 6-passenger cars are there?

2.) Tickets to the Valentine Dance cost $3 per person or $5 per couple. If $475 worth of tickets were sold and 180 people attended the dance, how many couples were there?

3.) Pi High School ordered 40 science books. The next week, the school ordered 30 algebra books. The bill for the first order was $360 greater than the bill for the second order. The two bills together totaled $3960. Find the price of an algebra book.

4.) To raise money for new uniforms, the band boosters sell t-shirts and hats. The cost of each t-shirt is $6.oo and the cost for the hat is $4.00. The boosters spend a total of $2,000 on t-shirts and hats. The selling prices of the t-shirts are $10.00 and the selling prices of the hats are $7.00. They sell all of the merchandise and their revenue is $3375. How many t-shirts and hats did they sell?

5.) Calvin has $8.80 in pennies and nickels. If there are twice as many nickels as pennies, how many pennies does Calvin have? How many nickels?

6.) A total of 78 seats for a concert are sold, producing a total revenue of $483. If seats cost either $2.50 or $10.50, how many $2.50 seats and how many $10.50 seats were sold?

7.) You enroll in a book club in which you can earn bonus points to use towards the purchase of books. Each paperback book you order cost $6.95 and earns you 2 bonus points. Each hardcover book costs $19.95 and earns you 4 bonus points. The first order you place comes to a total of $60.75 and earns you 14 bonus points. How many of each type of book did you order?

8.) Using only 34-cent stamps and 20-cent stamps, Peggy put $3.52 postage on a package. She used twice as many 34-cent stamps as 20-cent stamps. Determine how many of each type of stamp she used.

9.) The graph below was made to compare the coasts of renting copy machines from Company A and from Company B. What information is given by the point of intersection of the two lines.

A. The number of copies from which the fixed per-month charge is equal to the cost of copies
B. The price per copy for renting a copier from both companies
C. The fixed per-month charge for renting a copier from both companies
D. The number of copies for which the total cost per month is the same for both companies

Copy Machine Rental Cost