

Name _____ Date _____ Pd _____

4.5 Solving Systems of Linear Equations Word Problems

1. Nickels and Dimes: A woman has \$13.00 in nickels and dimes in a coin bank. She finds the number of dimes is 2 less than 5 times the number of nickels. Write and solve a system of equations to determine how many of each kind of coin she has.

Variables:

System:

Solution as a complete sentence:

2. Tea and Coffee: Two pounds of tea and three pounds of coffee cost \$19.00. Three pounds of tea and four pounds of coffee cost \$26.50. Write and solve a system of equations to determine the cost of one pound of tea and one pound of coffee.

Variables:

System:

Solution as a complete sentence:

3. Thinking of a Number: A father tells his son, "I'm thinking of two numbers." He provided the following clues:

- Twice the first of two numbers is 9 less than the second number.
- Thirteen times the sum of the two numbers is 3 less than the second number.

Find both numbers to know which numbers the father was thinking of.

Variables:

System:

Solution as a complete sentence:

4. Connie and Walter: Connie and Walter had lunch together at the same stand. Connie paid \$14.40 for her lunch of 4 hamburgers and 3 cokes. Walter paid \$10.50 for 3 hamburgers and 2 cokes. What is the price of one hamburger and one coke?

5. Towing Company: Auto Shop Towing charges \$0.50 per mile and \$15 to pick you up. Benny's Wrecker Service charges 40.75 a mile and \$10 to pick you up. Determine when the Auto Shop Towing would cost the same as Benny's Wrecker Service.

6. Planting Trees: Trees in urban areas help keep air fresh by absorbing carbon dioxide. A city has a total of \$2100 to spend on planting spruce and maple trees. The total land available for planting is 45,000 square feet. Spruce trees cost \$30 to plant and require 600 square feet of space. Maple trees cost \$40 to plant and require 900 square feet of space. Spruce trees absorb 650 pounds per year of carbon dioxide. Maple trees absorb 300 pounds per year of carbon dioxide. How many of each tree should the city plant to maximize carbon dioxide absorption?