

**U4D12 – JCP**

Identify the constraints, write a system of equations, solve and verify the solution with tables or graph. Be sure to show all your work and label and circle your answers.

1. At an ice cream parlor, ice cream cones cost \$1.10 and sundaes cost \$2.35. One day, the receipts for a total of 172 cones and sundaes were \$294.20. How many cones were sold?

Constraints:

Equations:

Solution:

2. Shopping at Savers Mart, Lisa buys her children four shirts and three pairs of pants for \$85.50. She returns the next day and buys three shirts and five pairs of pants for \$115.00. What is the price of each shirt and each pair of pants?

Constraints:

Equations:

Solution:

3. Suppose you are starting an office-cleaning service. You have spent \$315 on equipment. To clean an office, you use \$4 worth of supplies. You charge \$25 per office. How many offices must you clean to break even?

Constraints:

Equations:

Solution:

4. On a canoe trip, Rita paddled upstream (against the current) at an average speed of 2 mi/h relative to the riverbank. On the return trip downstream (with the current), her average speed was 3 mi/h. Find Rita's paddling speed in still water and the speed of the river's current.

Constraints:

Equations:

Solution:

Identify what type of solution each question has: One, none or infinite. Justify your response.

5.  $4x + 3y = 12$   
 $4x + 3y = -8$

6.  $y = \frac{5}{3}x - 3$   
 $y = -\frac{1}{3}x + 3$

7.  $18x + 9y = 36$   
 $12x + 6y = 24$

8. Justify how an equation remains equivalent to its original form when it has been multiplied by a number. Use tables, graphs and equations to support your response.