

Math 10-C Systems of Equations Assignment List

Name: _____

C1 Solving a System Graphically

- C1 Assignment - Solving Systems of Equations Graphically

C2 Number of Solutions to a System

- C2 Assignment - # of Solutions to a System

C1-C2 Quiz

C3: Model a Situation

- C3 Assignment - Model a Situation

C4: Solving Algebraically (Substitution)

- Text pg. 193: 1adf, 2-11

C5: Solving Algebraically (Elimination)

- Text pg. 197: 1bce, 4b, 6-14

C3-C5 Quiz

Unit Review

- Text pg. 212: 1-21, 23-26
- Problem Solving Practice Handout

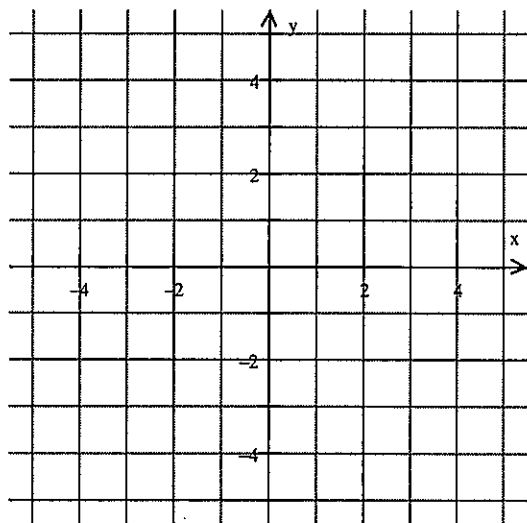
Systems of Linear Equations

Name: _____

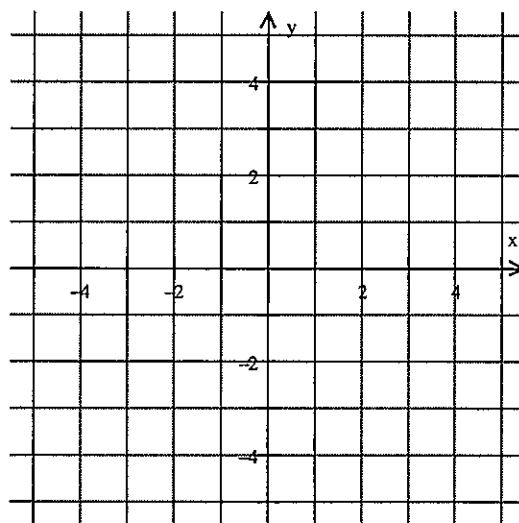
C1 Assignment - Solving Systems of Equations Graphically

1. For each question, graph both equations on the same grid and locate the intersection point.

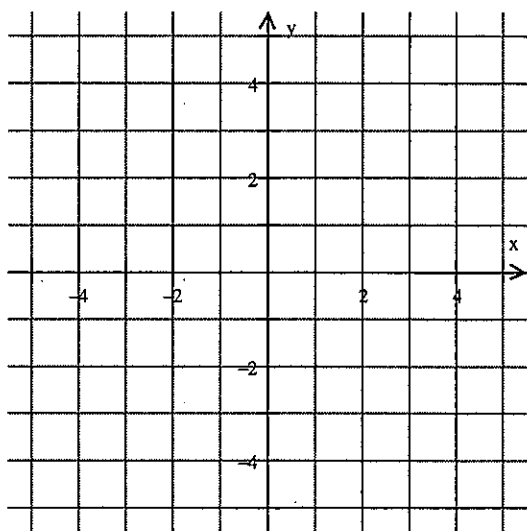
a) $y = \frac{1}{3}x + 1$; $y = 2x - 4$



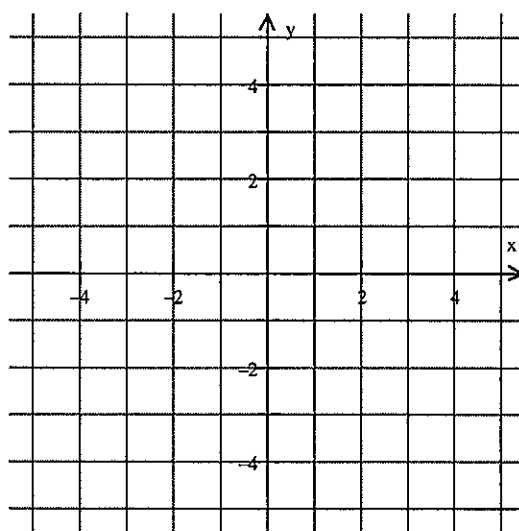
b) $y = \frac{1}{2}x + 4$; $5x + 4y + 12 = 0$



c) $y = -\frac{4}{3}x + 5$; $x = 3$

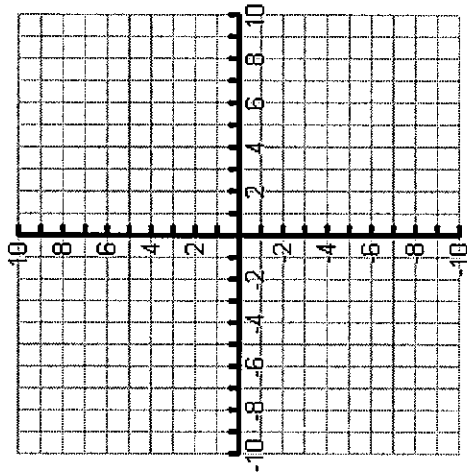


d) $y = -x - 1$; $y = -4$



2. Solve each system of linear equations graphically and then verify the solution algebraically.

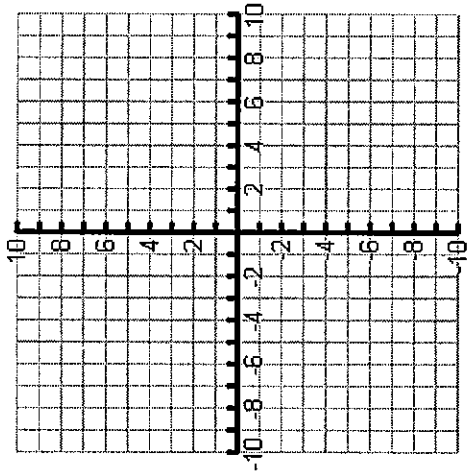
a) $y = 2x + 3$
 $y = -\frac{2}{3}x - 5$



Solution is _____

Verify Solution:

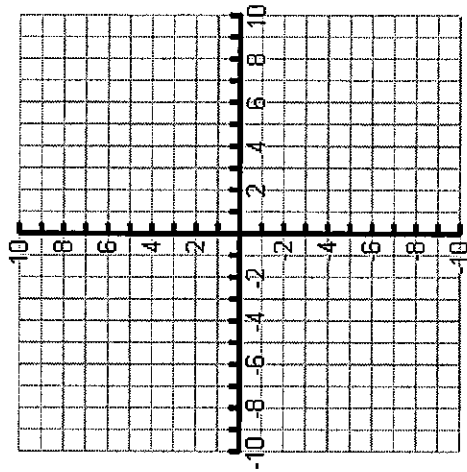
b) $x - y = -2$
 $3x + y = 10$



Solution is _____

Verify Solution:

c) $y = -\frac{1}{2}x - 6$
 $3x - y = -4$



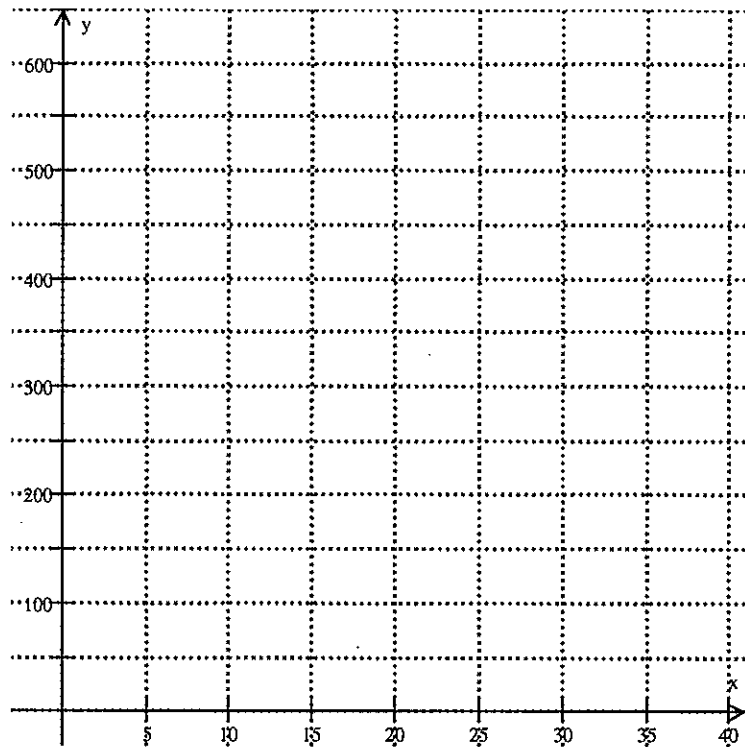
Solution is _____

Verify Solution:

3. You have just started a new job and have been given the following options for your weekly wage. Option 1 is an hourly rate of \$10/hr with a weekly salary of \$150. Option 2 is an hourly rate of \$15/hr with a weekly salary of \$50.

Make a System of Linear Equations to represent your wage options.

Explain which option would be better depending on how many hours you work in a week. (Please use a table of values and a graph in your explanation)



Systems of Linear Equations

Name: _____

C2 Assignment - Number of Solutions to a System

1. Predict the number of solutions for each system of linear equations. Justify your answers.

a) $y = 4x - 1$
 $y = 4x + 7$

b) $y = 3x + 5$
 $y = -3x + 5$

c) $x + 2y = 7$
 $5x + 10y = 35$

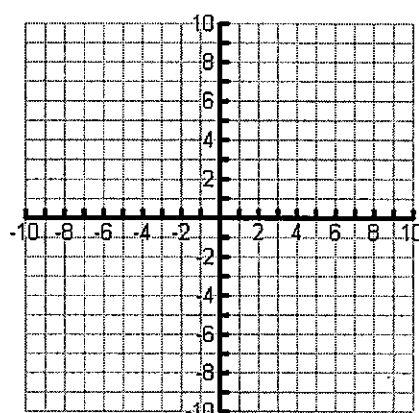
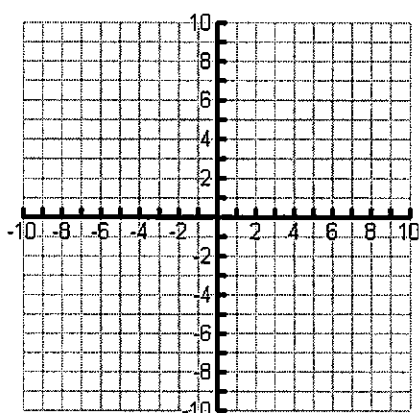
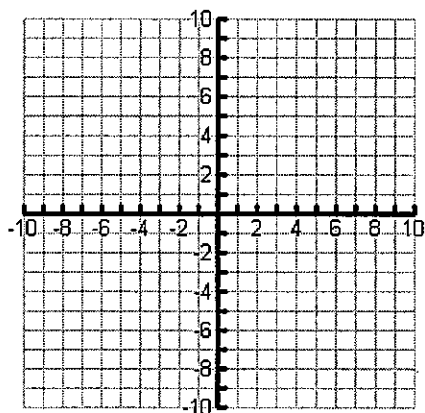
d) $2x - y + 3 = 0$
 $2x - y - 7 = 0$

2. Graph each system of linear equations and indicate the number of solutions.

a) $6x + 2y = 10$
 $y = -3x - 1$

b) $x + y = 9$
 $x - y = 9$

c) $3y = x + 6$
 $6y - 2x = 12$



3. A line is defined by the equation $y = \frac{3}{2}x - 4$. Determine the equation of a second line such that the system of linear equations has...

a) no solution

b) an infinite number of solutions

c) one solution

4. Service charges of two cell phone companies consist of a constant flat rate and a rate per minute of use. If C represent the total cost and m represents the rate per minute, use values of your choice to create a system of linear equations that expresses the service charges of the companies where the system has

a) one solution

b) no solution

c) an infinite number of solutions

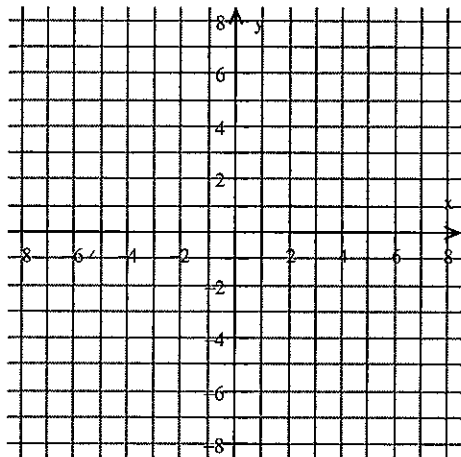
M10C Systems of Equations - Quiz C1,C2

Name: _____

Date: _____

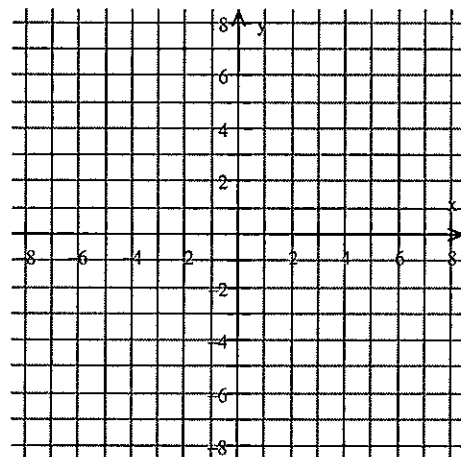
1. Solve each system of linear equations graphically.

a) $y = -2x + 5$
 $y = x - 4$



Solution = _____

b) $y = 4x + 8$
 $2x + 3y = -18$



Solution = _____

2. Verify that the point (2,5) is a solution to the following system of linear equations? Show all work.

$$x + 4y = 22$$

$$3x - y = 2$$

3. Predict the number of solutions for each system of linear equations. Justify your answers.

a) $y = -\frac{1}{2}x + 2$
 $y = -\frac{1}{2}x + 4$

b) $6y - 4x = 6$
 $y = \frac{2}{3}x + 1$

M10-C Systems of Linear Equations

Name: _____

C3 Assignment - Model a Situation

1. Model each situation with a system of linear equations.
 - a) One vehicle has 5 L of fuel in its tank and is being filled at a rate of 0.9 L/s. A second vehicle has 3 L of fuel in its tank and is being filled at a rate of 1.2 L/s. When is the volume of each tank the same?
 - b) Aircraft are landing and taking off on parallel runways at a busy airport. On its approach, one aircraft descends from an altitude of 1200 m to an altitude of 500 m in 35 s. During the same time, a departing aircraft climbs from an altitude of 200 m to an altitude of 1250 m. When are the airplanes at the same altitude?
 - c) Janna and Jordan are planning a birthday party and are comparing prices from two restaurants. The first restaurant charges \$20 per guest plus a flat rate of \$175. The second restaurant charges \$22.50 per guest plus a flat rate of \$100. What number of guests would make the cost of each restaurant the same?
 - d) Josee invests a total of \$15 000 in two different investments. The first amount is put into a long-term account that pays interest at a rate of 6.5% per year. The second amount is put into a short-term account earning interest at a rate of 5% per year. Josee's investments earn a total of \$885 in interest in one year. How much money did Josee put into each investment?
 - e) A group of people bought tickets for a University of Alberta basketball playoff game. Two student tickets and six adult tickets cost \$102. Eight student tickets and three adult tickets cost \$114. What was the price for a single adult ticket? What was the price for a single student ticket?

M10C Systems of Linear Equations
Quiz C3-C6

/ 8

Name: _____

Solve each system of equations using an algebraic method (Substitution or Elimination).

1. $y = 3x - 1$
 $x + y = 11$

2. $7x - 6y = 27$
 $2x + 9y = -3$

3. A 500-space parking lot is filled with motorcycles and passenger cars, with only one vehicle in each space. How many motorcycles and cars are there if the total number of tires on the parked vehicles is 1650?

4. A sports club charges an initiation fee and a monthly fee. At the end of 5 months, Christelle had paid a total of \$170. Her friend, Keaton, had paid \$295 at the end of 10 months. What is the initiation fee and what is the monthly fee?

M10C - Systems of Equations: Problem Solving Practice

Name: _____

It would be beneficial for you to solve all of these problems to help you prepare for the problem solving sections of the Systems of Linear Equations Unit Exam.

1. Jason is renting a car for one week. Speed-E-Car Rental offers a compact car for \$379 plus \$0.10 per kilometre. Easy 4 U Auto offers a compact car for \$249 plus \$0.35 per kilometre. Use a system of linear equations to determine when each company would be the better choice for Jason.
2. Soo Jin had basketball practice after school. Then, she cycled home. Playing basketball, she expends energy at a rate of 25 kJ per minute. Cycling home, she burns energy at a rate of 21 kJ per minute. She spent a total of 90 min doing both forms of exercise. During this time, she expended a total of 2178 kJ of energy. How much time did she spend doing each activity? (MHR pg. 490)
3. A preschool playground has both bicycles and tricycles. There is a total of 30 seats and 70 wheels. How many bicycles are there? How many tricycles are there? (MHR pg. 489)
4. At the snack bar, five toasted bagels and three cans of juice cost \$12.50. Three toasted bagels and six cans of juice cost \$12.75. What is the price for one bagel? What is the price for one juice? (MHR pg. 490)
5. The percent of carbohydrates by weight in grapes is 15%. The percent of carbohydrates in an orange is 7%. Danika consumed a total of 325 g of grapes and oranges. The percent of carbohydrates in the mixture she ate was 10%. How many grams of grapes did she eat? How many grams of oranges? (MHR pg. 502)