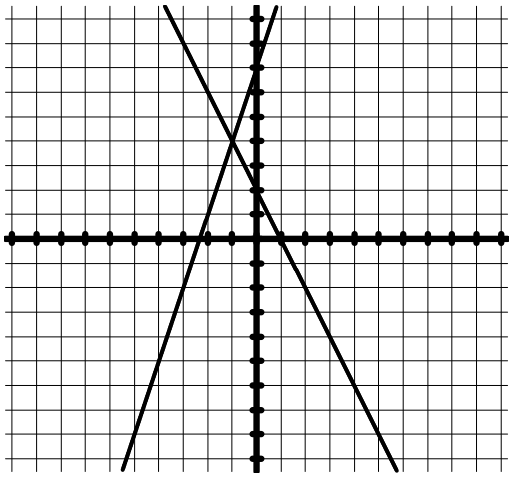
MFM2P Linear Systems Name: _____ Date: _____

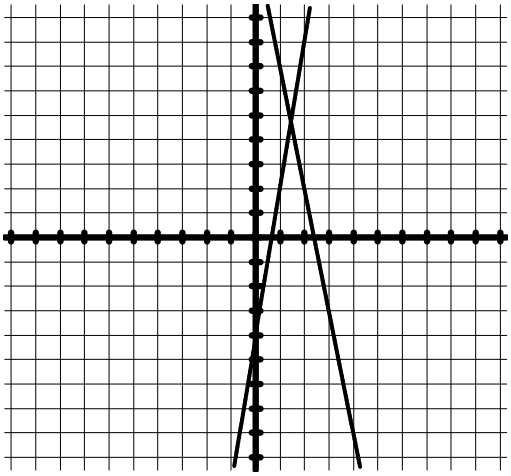
Solving Linear Systems Using Graphing, Substitution and Elimination

1. Determine the solution of the following graphs. **Remember to estimate if required**

a)

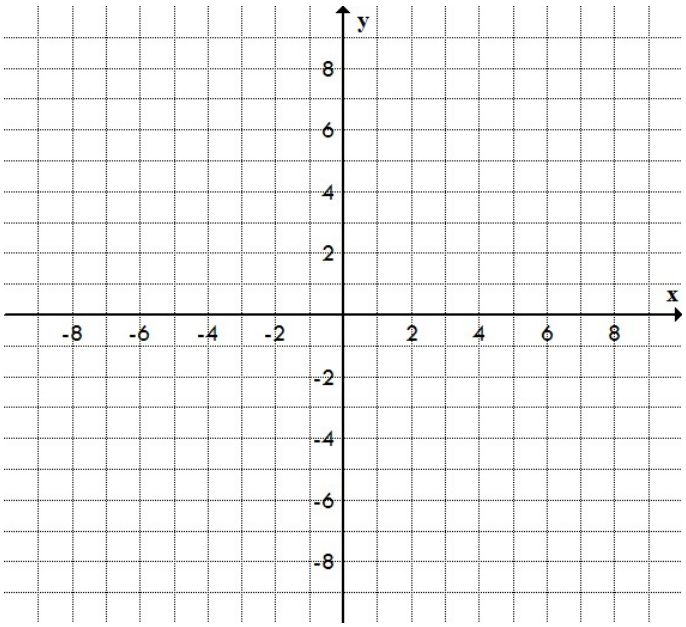


b)



2. a) Using **graphing** determine the solution of the following linear system.

$y = 6x + 1$
$y + x = 8$



b) CHECK your solution

3. Solve the following linear systems using **SUBSTITUTION**. You must CHECK your solution.

a) $x = 7 + 2y$
$2x - 3y = 13$

b) $-3x + y = 5$
$4x - 3y = -25$

4. Solve the following linear systems using the **ELIMINATION** method. **CHECK** your solution.

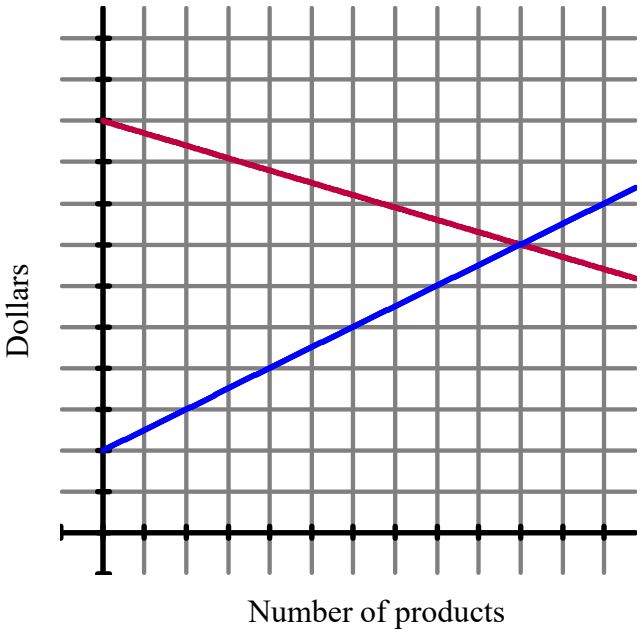
a) $3x - 4y = 14$ $-3x - 7y = 8$

b) $2x - y = -13$ $x - y = -10$

5. At a factory, Darren develops production schedules and maintains an inventory of raw materials and finished products. The following linear equations represent the cost and revenue for the product.

Cost: $y = -0.3n + 10$ where n represents the number of products
Revenue: $y = 0.5n + 2$

The following graph represents the solution



a) Label each line either cost or revenue

b) Solve the solution.

c) **Explain** what the solution represents?

d) At what **price** does the factory break even?

e) **How many products** does the factory need to produce at this price to break even?

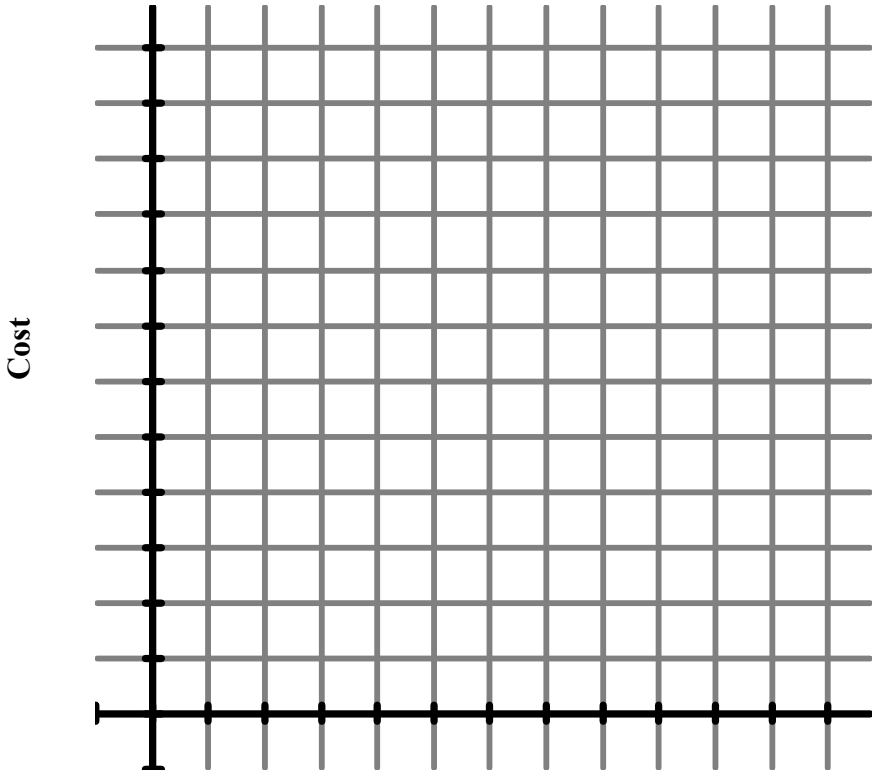
f) When will it be too expensive to produce the product?

6. Bell mobility charges their customers a flat fee of $5.00 plus an addition $0.50 for every minute they talk on the phone. Telus charges their customers a flat fee of $3.00 plus an additional $0.75 for every minute they talk on the phone.

a) Write the equations to represent the cost of using either phone, letting ***t*** represent the number of minutes and ***C*** represent the cost of each plan.

Bell Mobility Telus

b) Graph each equation on the following graph and determine the P.O.I.



c) Explain what the solution represents?

d) If a person typically talks more than 10 minutes a month, which plan should they choose and why?