System Of Linear Equations
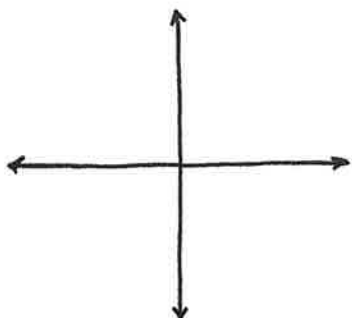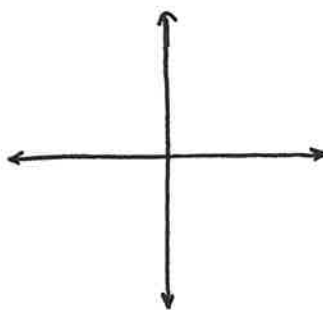
1 SOLUTION **NO SOLUTIONS** **INFINITELY MANY SOLUTIONS**

$X + Y = 7$
$X - Y = -1$
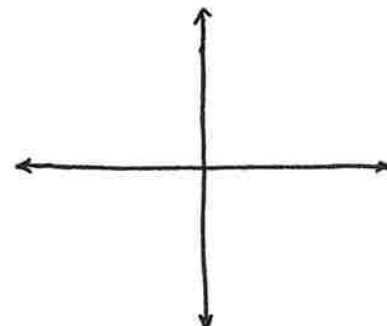
$X + 2Y = 2$
$X - 2Y = 6$

Solve by Substitution.

3X + 2Y = 4
2X + Y = 1

Solve by Elimination.

3X – 4Y = 11
-3X + 2Y = -7

Solve.

$3X + 2Y = 48$
$9X - 8Y = -24$

$2X = 7Y - 17$
$5Y = 17 - 3X$

$4X + 6Y = 12$
$6X + 9Y = 12$

$Y = 3X - 2$
$15X - 5Y = 10$

A company produces and sells X items of a product.

Revenue Function: R(X) = (price per item sold)(X)

Cost Function: C(X) = (cost per unit produced)(X) + (fixed cost)

Profit Function: P(X) = R(X) – C(X)

A company is planning to manufacture dining room tables. The fixed cost is $500000 and making each table costs $400. Each table will be sold for $600.

Write the cost function.   Write the revenue function.

Determine the break-even point and determine what it means.

A chemist needs to mix a 10% acid solution with a 60% acid solution to obtain 50 milliliters of a 30% acid solution. How many milliliters of the 10% acid solution and the 60% acid solution should be mixed?

Rowing with the current, a boat travels 16 miles in 2 hours. Rowing against the current, the boat travels 8 miles in 2 hours. Find the rate of the boat in still water.

A collection of dimes and quarters is worth $7.00. If there are 43 total coins, find the number of each type.

Charlotte has invested $10000 in two funds. One fund pays 8% simple interest, and the other fund pays 7% simple interest. If her yearly interest is $772, how much is invested in each fund?

If one maid can clean a room in 30 minutes and another maid can clean the same room in 20 minutes, how long will it take both maids working together?

The sum of the digits of a two-digit number is 14. If the digits are reversed, the number is increased by 18. What is the number?