

So far we have been _____ and _____.

In this unit we will look at _____

(finding the Point of Intersection between 2 lines)

We are now going to see how this can help us to make decisions!

- choosing a cell phone plan, rental company or fitness plan

Ex. 1 A fitness club offers two types of payment plans:

DROP- IN: \$3 per visit

MEMBERS ONLY: a flat fee of \$8 plus \$2 per visit

a) Create an equation that represents the cost (C) per number of visits (n)

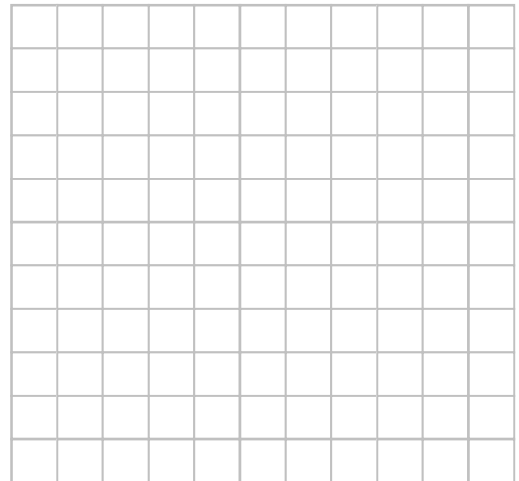
DROP- IN:

MEMBERS ONLY:

b) Create a table of values that represents the cost C per n visits and graph each of the scenarios on the following grid.

DROP- IN	
n	C
0	
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

MEMBERS ONLY	
n	C
0	
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	



c) What is the point of intersection? What does it represent?

d) Which fitness club payment plan would you choose? Explain.

Ex. 2 Crystal has no money in her bank account but she plans to **deposit** \$10 at the end of each week. Steve has \$150 in his bank account but plans to **take out** \$15 at the end of each week.

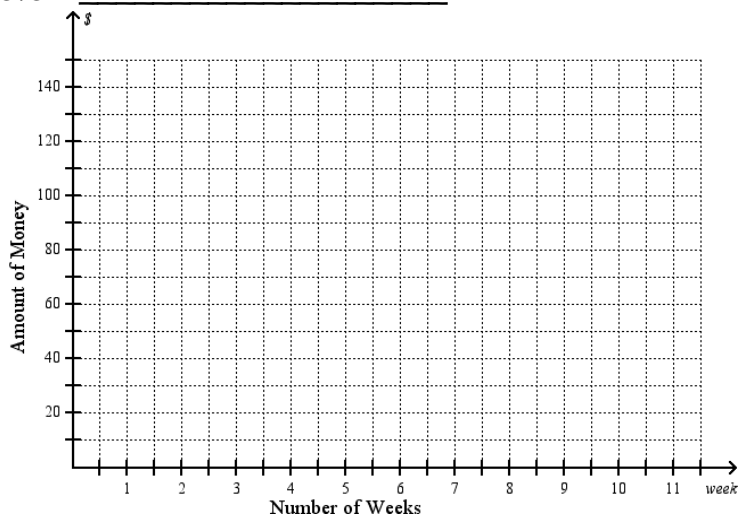
- a) Write an equation for each situation, where T is the total amount in their bank account and w is the number of weeks that have passed.

Crystal: _____

Steve: _____

- b) Fill in the table and graph.

# of Weeks	Crystal's Savings	# of Weeks	Steve's Savings
0		0	



- c) After how many weeks will Crystal and Steve have the same amounts of money in the bank?

Definitions:

System of linear equations: a _____ of equations. (at least _____)

Solution of a linear system: the _____ of _____ (POI).
(a point that satisfies both equations). "Where the lines cross"

Example 3:

Solve the system (by graphing)

$$y = 2x \quad \text{and} \quad y = -\frac{1}{2}x + 5$$

