U6D7 Warm Up:

Determine the equation of a line passing through (-2, -3) and (-1, 1).

U6D7 ***Linear Systems (6.7)***

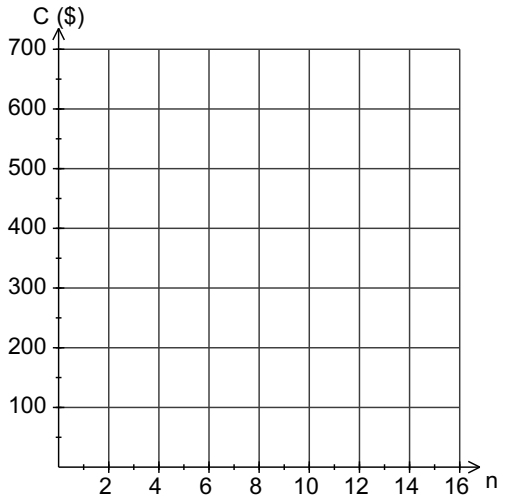
Linear system –

Point of intersection –

Word Problem: Mike wants to join a ski club for the winter. He is considering the Standard Rate ($50 per day) and the Frequent Extremist ($100 registration plus $40 per day).

a. Write an equation that relates the total cost to the number of days for both payment options.

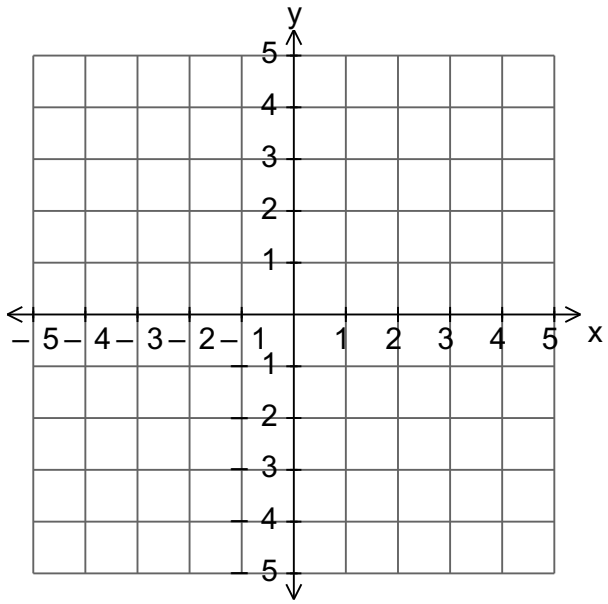
b. Graph both equations on the same graph.



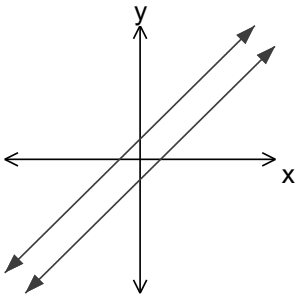
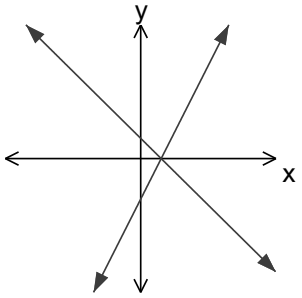
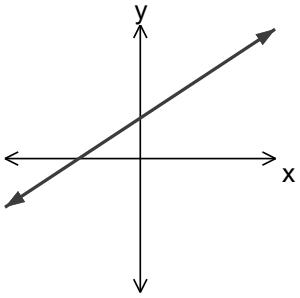
c. When do both options cost Mike the same amount?

d. Which payment option should Mike choose?

Example 1 Graph the following lines and identify the point of intersection. $y = -\frac{3}{2}x + 1$ and $x - y = 4$, verify your solution.



Example 2 How many different solutions are there to a linear system of two equations?

Case #1 – two parallel lines	Case #2 – two non-parallel lines	Case #3 – two identical lines
		

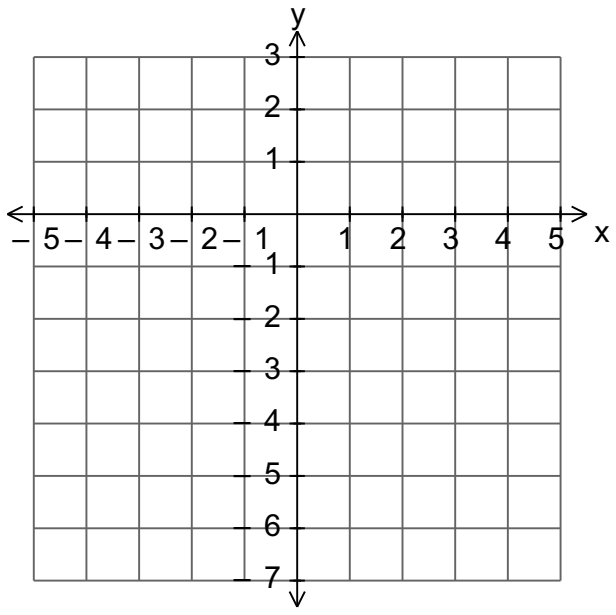
Example 3 How many solutions do the following linear systems have?

a. $y = 4x - 3$ $\quad y = -\frac{1}{2}x + 1$

b. $y = -5x + 3$ $\quad y = -5x - 10$

c. $y = x + 1$ $\quad 2x - 2y + 2 = 0$

Example 4 Find the equation of the line that passes through the point of intersection of $y = x - 2$ and $3x - 4y = 12$ and is parallel to $x - 4y + 1 = 0$.



U6D7 HW: page 348-351 #1, 2, 7, 9, 10, 13, 12(use graphing software for #12)