4.6 Systems of 1st Degree Equations

- Finding the solution to a system of equations means find a common point (x,y), that fits into both equations at the same time.
- We can find the solution by making a table of values and finding when the values for y are the same.
- We can check the solution of a system by replacing it back into the original equations to see if it works.
- We can also graph the two lines on the same grid and see where the lines cross.

Ex 1: Is x = 2 and y = 4 a solution to the following systems?

1. $y = 2x$
   $y = x + 3$

2. $y = 6 - x$
   $y = x + 2$

Ex 2: Solve the system using a table of values

$y = 2x + 5$

$y = x + 8$

Choose values for x and calculate values for y. The solution exists when both values of y are the same.

x	$y_1 = 2x + 5$	$y_2 = x + 8$
0		
1		
2		
3		

Ex 3: Solve the system in ex 2, by graphing

$y = 2x + 5$

$y = x + 8$

x	$y_1 = 2x + 5$	$y_2 = x + 8$
0	5	8
1	7	9
2	9	10
3	11	11

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Ex 4: Solve using the comparison method

$y_1 = 4x + 6$

$y_2 = -2x$

Both equations must be isolated for the same variable

Compare both y's

Solve for x

Replace x and solve for y_1 then in y_2 to check

$\therefore$ *solution is*

Ex 5: Solve using the comparison method

$y = 3x - 2$

$y = 5x + 6$

$\therefore$ solution is (

Practice:
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page 125 # 3-7