Today's Learning Goal(s):

By the end of the class, I will be able to:

a) Ready for tomorrow's Unit 1 Summative.

Return Exit Cards and Discuss

Complete and Correct Handout on following screens.

Correct Review homework from last day (using student solutions?)

pp. 48-49 #1, 2, 4d (use substitution), 8, 9d (use elimination+show a check), 10b, 12d, 13

Today's Practice

EXIT CARDS?

pp.50-51 #10ab, 14, 19: define variables and the system – BUT DON'T SOLVE

In your notebook:

pp. 50-51 #18, 5, 16bc

p.48 #8

$$9x - 3y = 18$$

$\div 3$

$$3x - y = 6$$

p 48 #12d

$2(x-1)-3(y-3)=0$

$2x-2-3y+9=0$

$2x-3y+7=0$

$2x-3y=-7$

$3(x+2)-(y-7)=20$

$3x+6-y+7=20$

$3x-y+13=20$

$3x-y=20-13$

$3x-y=7$

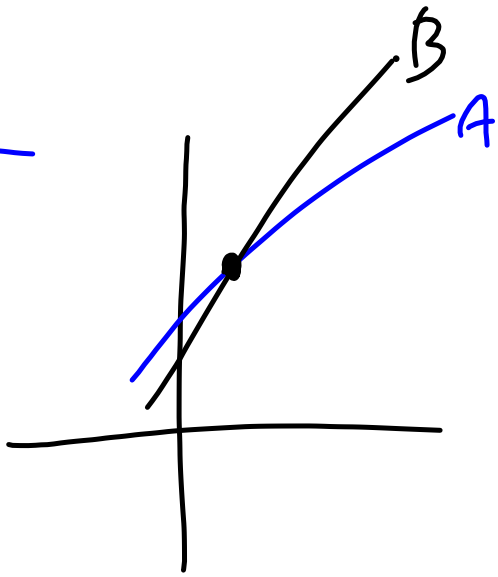
p.48 #13

d - distance in km

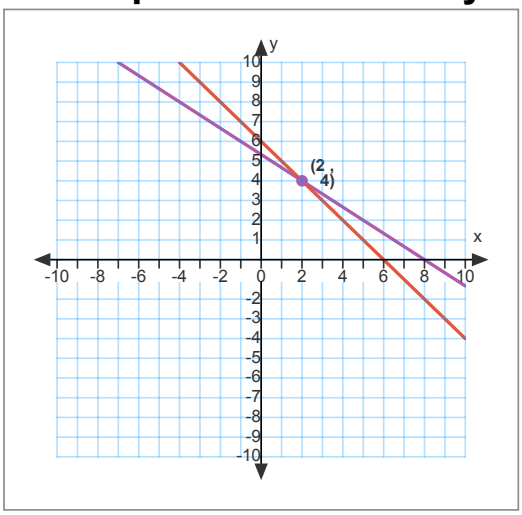
C - cost in dollars

A: $C = 5 + 0.35d$

B: $C = 3.50 + 0.50d$



Reviewing Equivalent Linear Relations and Equivalent Linear Systems



$x + y = 6$ ①

$x + 2y = 10$ ②

$4x - y = 4$ ③

$x - 2y = -6$ ④

① $x + y = 6$

3 x ①

5 x ①

-2 x ①

The above are all equivalent linear **equations**.

① $x + y = 6$

①+② $x + 2y = 10$ ②

①+④ $x - 2y = -6$ ④

③-① $4x - y = 4$ ③

$x + y = 6$ ①

The above are all equivalent linear **systems**.

MPM 2DI 1.R Linear Systems Unit Review Date: Sept. 21/16

A linear system is a set of 2 (or more) lines.
The solution to the system is the Point Of Intersection (P.O.I.) of those lines.

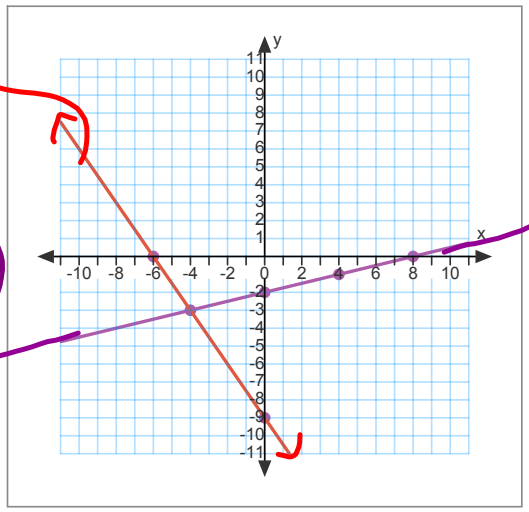
Ex. 1 a) Solve the system by graphing.

$3x+2y+18=0$ ① $y=\frac{1}{4}x-2$ ②

x-int let y=0
$3x+2(0)=-18$
$3x=-18$
$x=-6$

y-int, let x=0
$3(0)+2y=-18$
$2y=-18$
$y=-9$

$b=-2$
$m=\frac{1}{4}$ $\left(\frac{\text{Rise}}{\text{Run}}\right)$



-4 -3

b) Did you remember to state your solution?
(i.e. Identify the coordinates of the point of intersection.)

Ex. 2 Solve the system by substitution, and include a proper check.

$3x-4y=-13$ ①
$2x-y=-12$ ②

$2x+12=y$

$3x-4(2x+12)=-13$
$3x-8x-48=-13$
$-5x=-13+48$
$-5x=35$
$x=-7$

Sub in ①
$3(-7)-4y=-13$
$-21-4y=-13$
$-4y=-13+21$
$-4y=8$
$y=-2$

$(-7,-2)$

Check in ②
$x=-7$ $y=-2$
LS $=2x-y$ RS $=-12$
$=2(-7)-(-2)$
$=-14+2$
$=-12$
$\therefore$ LS = RS
$\therefore (-7,-2)$ is the solution.

Ex. 3 Solve the system by elimination, and include a proper check.

$2x-8y=7$ ①
$5x+6y=-2$ ②

$\times 5$: $10x-40y=35$
$\times 2$: $-10x-12y=4$ ③

$-52y=39$
$y=\frac{-3}{4}$

Sub in ①
$2x-8\left(\frac{-3}{4}\right)=7$
$2x+6=7$
$2x=7-6$
$2x=1$
$x=\frac{1}{2}$

$\left(\frac{1}{2},\frac{-3}{4}\right)$

Check in ②
LS $=5x+6y$ RS $=-2$
$=5\left(\frac{1}{2}\right)+6\left(\frac{-3}{4}\right)$
$=\frac{5}{2}-\frac{9}{2}$
$=\frac{5-9}{2}$
$=\frac{-4}{2}$
$=-2$
$\therefore$ LS = RS
$\therefore \left(\frac{1}{2},\frac{-3}{4}\right)$ is the solution.

Fri. Sept.16 p.47 #9, 10, 13, 14 // Mon. Sept. 19 p.47 17, 8

p.47 #10

Let x represent the volume of 30% solution needed, in ml

Let y 60% solution needed, in ml.

Needs 10 L of 42% solution.

p. 46 #

Let p represent the speed of the plane in km/h

Let w represent the wind speed in km/h.

Method	Distance	Speed	Time
tailwind	3000	= p + w	× 5
headwind	3000	= p - w	× 6
Totals:			

$3000 = (p+w)5$

$= 5(p+w)$

$3000 = 5p + 5w$

$3000 = (p-w)6$

$3000 = 6p - 6w$

p.47 #17 $d = st$

Let *b* represent the "best" cruise speed in km/h.

Let *e* represent the "economy" cruise speed in km/h.

$2b + 3e = 850$

$3b + 2e = 900$ $\times 3$

$6b + 9e = 2550$

$-6b - 4e = -1800$ $\times(-2)$

$5e = 750$

$e = 150$

Sub in ①

$2b + 3(150) = 850$

$2b + 450 = 850$

$2b = 850 - 450$

$2b = 400$

$b = 200$

∴ the best cruise speed is 200 km/h, and the economy speed is 150 km/h.

p. 46 #7

Let r represent his rowing speed in km/h.

c the speed of the current in km/h.

Method	Distance	Speed	Time
downstream	10		
upstream	8		
Totals:			