Trig

Ch. 2 questions

Will start 3.1 on Tues.

17.

a $x - 2y - 3z = 2$ ③

b $-3x + 5y + 4z = 0$

c $x - 4y + 3z = 14$ ③

$x + 12 + 0 = 2$

$x + 12 = 2$

$x = -10$

x y z

$(-10, -6, 0)$

$3x - 6y - 9z = 6$

$-3x + 5y + 4z = 0$

d $-y - 5z = 6$ $\xrightarrow{-7}$

$7y + 35z = -42$

$-7y + 13z = 42$

$48z = 0$

$z = 0$

$-3x + 5y + 4z = 0$

$8x - 12y + 9z = 42$

e $-7y + 13z = 42$

$-7y + 0 = 42$

$\frac{-7y}{-7} = \frac{42}{-7}$

$y = -6$

34. $\begin{vmatrix} -3 & 5 \\ -4 & 7 \end{vmatrix}$ (-20) (-21) $-21+20=-1$

39. $\begin{bmatrix} 3 & 8 \\ -1 & 5 \end{bmatrix}$ -8 15 $15+8$

$\frac{1}{\det}\begin{pmatrix} w & 5 \end{pmatrix} = \frac{1}{23}\begin{bmatrix} 5 & -8 \\ 1 & 3 \end{bmatrix}$

45. $2x + 5y = 1$

$-x - 3y = 2$

Coeff. Var. Const

$$\begin{bmatrix} \quad \end{bmatrix} \begin{bmatrix} 2 & 5 \\ -1 & -3 \end{bmatrix} \begin{bmatrix} x \\ y \end{bmatrix} = \begin{bmatrix} 1 \\ 2 \end{bmatrix} \begin{bmatrix} \quad \end{bmatrix}$$

A

$$\begin{bmatrix} 13 \\ -5 \end{bmatrix}$$

B

$A^{-1} \cdot B$

$2 \times (2)$ (2) · 1

$\begin{bmatrix} \quad \end{bmatrix}$

$f(x,y) = 2x + 3y$

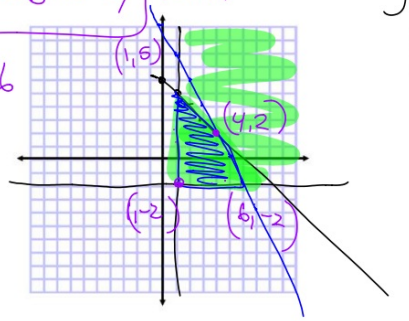
$f(1,5) = 2 + 15 = 17$ max

$f(4,2) = 8 + 6 = 14$

$f(1,-2) = 2 + -6 = -4$ min

$f(6,-2) = 12 + -6$

$= 6$



$x \geq 1$

$y \geq -2$

$y + x \leq 6$

$y \leq -x + 6$

$y \leq -2x + 10$

51. max. miles

m = motorcycle
t = truck

$\star f(m,t) = 42m + 22t$

$t \leq 25$

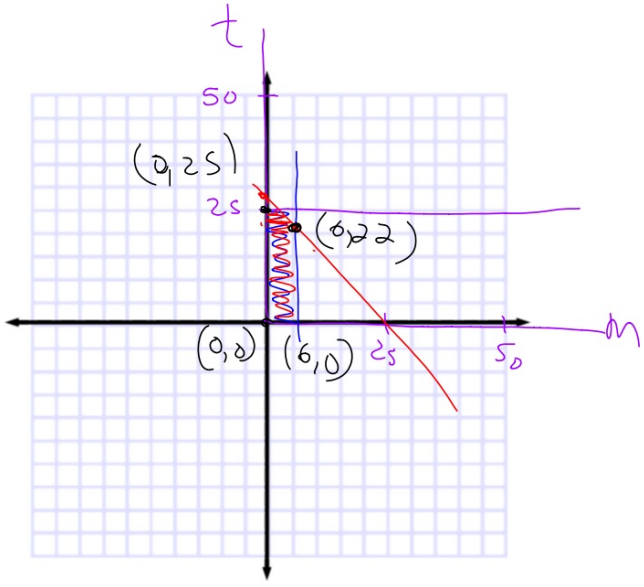
$m \leq 6$

$t + m \leq 28$

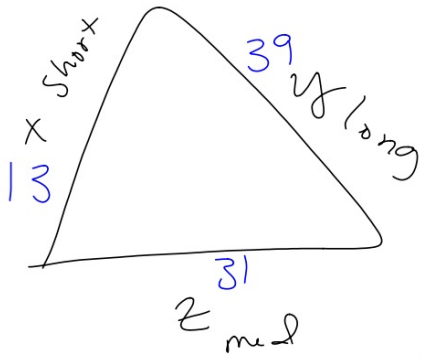
$t \leq -m + 28$

-5

5



53.



$x + 3x + z = 83$ $\quad 4x + z = 83$

$(x^{13}) + (y^{39}) + (z^{z}) = 83$

$y = 3x$

$y = \frac{1}{2}(x+z) + 17$

$3x = \frac{1}{2}x + \frac{1}{2}z + 17$

$2\times \quad 2\tfrac{1}{2}x - \tfrac{1}{2}z = 17$

$5x - z = 34$

$4x + z = 83$

$5x - z = 34$

$9x = 117$

$x = 13$

54.

(E, V) max profit

$f(e, v) = 5e + 2.40v$ max

		v	e
240	mold.	5	6
120	machine	3	2
540	assembly	5	18

mold $5v + 6e \leq 240$

$3v + 2e \leq 120$

$5v + 18e \leq 540$