Homework Problems to correct

MID ch. test
2.5, 2.6, 2.7

MCT # 18

1980 = 2.5 calls/month

1990 = 4.1 calls/month

1993 = ?

$\Delta Y = k \Delta X$

$(1990-1980) = k(4.1-2.5)$

$10 = k(1.6)$

$k = 6.25$

$1993-1990 = 6.25(x-4.1)$

$3 = 6.25(x-4.1)$

$.48 = x - 4.1$

$\boxed{x = 4.58 \text{ call/month}}$

2.5 #40

$.4x + .8y \leq 10$ ← (26 - 2(8))

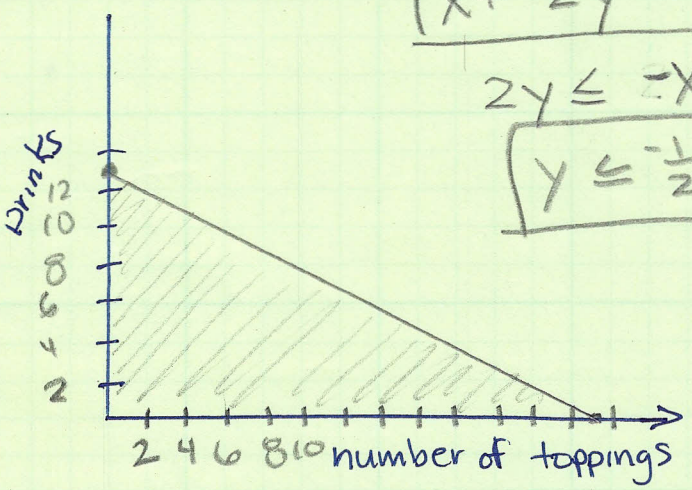
$10 \cdot \left(\frac{4}{10}x + \frac{8}{10}y = 10\right)$

$4x + 8y = 100$

$\boxed{x + 2y \leq 25}$ or

$2y \leq -x + 25$

$\boxed{y \leq -\frac{1}{2}x + 13.5}$



coordinates for 6 drinks + 6 topping are

(6, 6)

This is an inequality

Problems to correct		2.6, 2.7

2.6 #58 $r = -10|t-6| + 60$ where r = speed ft/sec, t = sec

General approach

$d = rt$, where $r = 60$ ft/s

and $t = \Delta t$ for both sides of the equation

set $r = 0$ and solve for both t's

$$0 = -10 * -(t_1 - 6) + 60$$

$$-60 = -10(-t_1 + 6)$$

$$-60 = 10t_1 - 60$$

$$0 = 10t_1$$

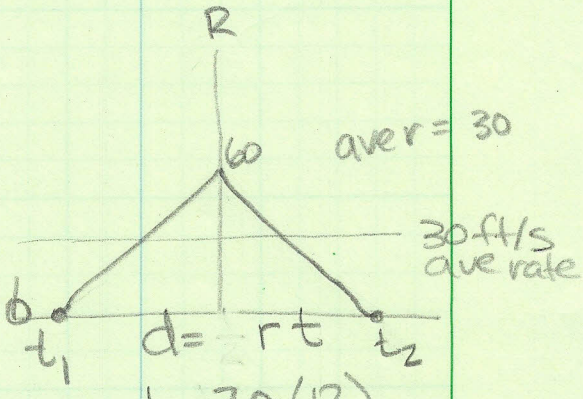
$$t_1 = 0 \quad \underline{\text{and}}$$

$$0 = -10 * (t_2 - 6) + 60$$

$$-60 = -10t_2 + 60$$

$$-120 = -10t_2$$

$$t = 12 \text{ seconds}$$



assuming ave. speed of $\frac{30 \text{ ft}}{\text{s}}$ $\left(\frac{0+60}{2}\right)$

$d = 30(12)$

$d = 360$ ft

2.7 [redacted]

#34

$\bar{x} = 20 \quad \bar{y} = 31.2$

x_i	$x_i - \bar{x}$	$(x_i - \bar{x})^2$	y_i	$y_i - \bar{x}$	$(y_i - \bar{y})^2$	$(x_i - \bar{x})(y_i - \bar{y})$
0	-20	400	12	-19.2	368.64	384
10	-10	100	22	-9.2	84.64	92
20	0	0	30	-1.2	1.44	0
30	10	100	38	6.8	46.24	68
40	20	400	54	22.8	519.84	456
		Σ 1000			Σ 1020.8	Σ 1000

$$r = \frac{1000}{\sqrt{1000 \cdot 1020.8}} = \frac{1000}{1010.3} = .99$$