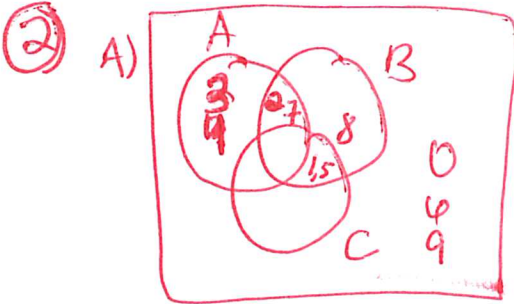


Sample final Question Answers.

① $E = -9\left(\frac{10}{20}\right) + -8\left(\frac{5}{20}\right) + -5\left(\frac{2}{20}\right) + 0\left(\frac{1}{20}\right) + 90\left(\frac{1}{20}\right) = -2.75$

NOT Fair SINCE $E \neq 0$.



b) $\{0, 3, 4, 6, 9\}$

e) 2

c) \emptyset

f) $\{3, 4\}$

d) $\{1, 2, 3, 4, 5, 7, 8\}$

g) $\{1, 2, 5, 7\}$



④ a) $40P_3 = 40 \cdot 39 \cdot 38 = 59280$

c) $40P_3 + 40P_2$

b) $40 \cdot 40 \cdot 40 = 64000$

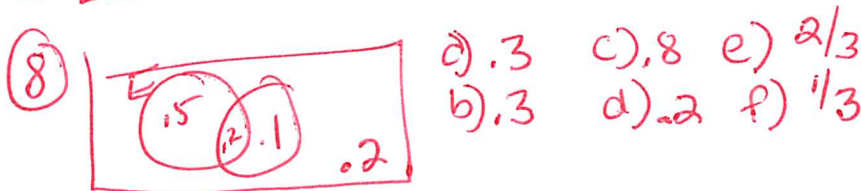
$40 \cdot 39 \cdot 38 + 40 \cdot 39$

60840

⑤ a) $n(n-1)(n-2)$ b) 122 c) 20825

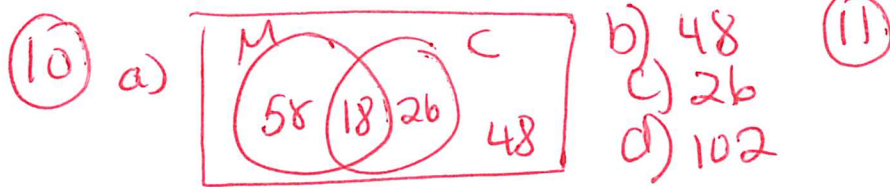
⑥ a) $25P_3 = 3800$ b) $25C_4 = 12650$

⑦ $7C_2 \cdot 9C_3$



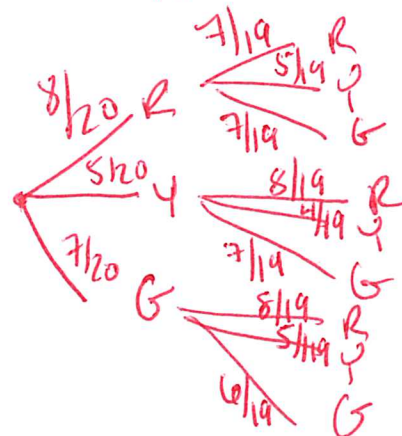
a) .3 c) .8 e) $\frac{2}{3}$
b) .3 d) .2 f) $\frac{1}{3}$

⑨ a) $\frac{61}{70} = .87$ b) $\frac{15}{150} = .10$ c) $\frac{73}{150} = .49$ d) $\frac{52}{150} = .35$ e) $\frac{40}{62} = .65$
f) $\frac{40}{77} = .52$



b) 48
c) 26
d) 102

⑪



b) $\frac{1}{19}$
c) $\frac{14}{95}$
d) $\frac{8}{19}$

⑫ $\frac{13}{52} \cdot \frac{25}{51} \cdot \frac{26}{50} = .064$

⑬ a) $.7 \cdot .7 \cdot .7 = .343$ b) $(.3)^2 = .09$

e) $\frac{\frac{8}{20} \cdot \frac{7}{19}}{\frac{8}{20} + \frac{7}{19} + \frac{5}{20} \cdot \frac{7}{19} + \frac{7}{20} \cdot \frac{6}{19}} = \frac{8}{19}$

14) a) $26C_4 (.10)^4 (.9)^{22} = .1472$

b) $1 - P(X=0)$

$P(X=0) = 26C_0 (.10)^0 (.9)^{26} = .065$

$1 - .065 = .935$

16) a) $-\$30/\text{mo}$ b) $y = -30x + 1000$

c) $400 = -30x + 1000 \dots x = 20 \text{ mo.}$

17) a) $y = -\frac{2}{3}x + 1$ b) $y = 3x$ c) $y = -4$

18) a) $C = 40 + 26x$

b) $\$26/\text{day} = \text{cost per day}$ $y\text{-int} = \$40 = \text{fixed price.}$

c) $C = 40 + 26(4) = \$144$ d) $20 = 40 + 26x \dots x = 6.15$
6 days

19) a) $R = 1.10x$ b) $C = .80x + 8400$ P) $R - C = 1.10 - (.80x + 8400)$

d) $R = C$
 $1.10x = .80x + 8400$

$.3x = 8400 \quad x = 28000 \text{ cars}$

$\$R = 1.10(28000) = 30,800$

$(28,000, \$30,800)$

20) $m = \frac{6+4}{8-2} = \frac{10}{6} = \frac{5}{3}$

$y + 4 = \frac{5}{3}(x - 2)$ OR $y = \frac{5}{3}x - \frac{22}{3}$

22) a) Min

$x = \# \text{ of ads in Sentinel}$

$y = \# \text{ of ads in journal}$

$z = \# \text{ of ads in Tribune.}$

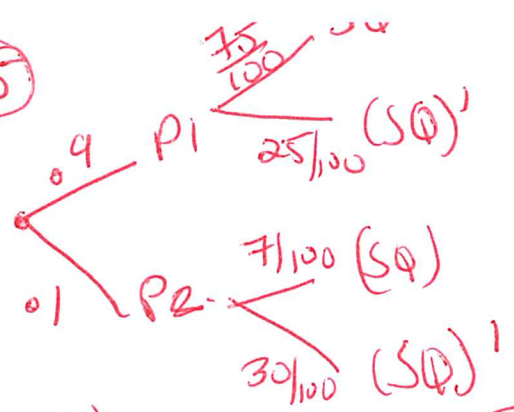
$C = 200x + 260y + 100z$

$x + y + z \leq 10$

$2000x + 500y + 1500z \geq 10000$

$x, y, z \geq 0$

15)



d) $\frac{.90(.75)}{.9(.75) + .10(.70)} = .906$

21) $-16y = -14x + 31$

$y = \frac{14}{16}x - \frac{31}{16}$

a) $m = 14$

b) $y\text{-int. } -16y = 31$
 $(0, -31/16) \quad y = \frac{31}{16}$

$x\text{-int. } 14x = 31$
 $(\frac{31}{14}, 0)$

X = amt. invested in Bonds

y = amt " " mutual funds

z = amt " " money market.

Max

$$R = .08x + .13y + .15z$$

$$x + y + z \leq 100,000$$

$$y + z \leq x$$

$$x, y, z \geq 0$$

23) z = t a) $(4, 8-t, t)$

x = 4

$$4 + y + z = 12$$

$$4 + y + t = 12$$

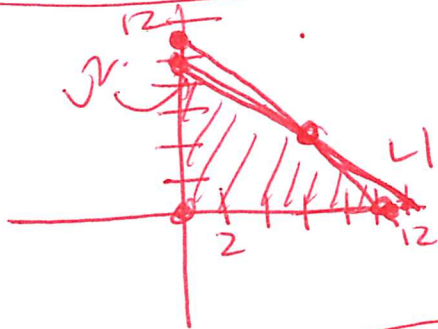
$$y = 8 - t$$

b) $\begin{cases} x = 2 \\ z = 0 \\ y = 3 \end{cases}$

c) no solution.

24) L1: $x + y = 11$

L2: $5x + 6y = 60$



$$-5x - 6y = -55$$

$$5x + 6y = 60$$

$$y = 5$$

$$x + 5 = 11$$

$$x = 6$$

L1:	L2:
x y	x y
0 11	0 10
11 0	12 0

check: (0,0)

$$0 + 0 \leq 11 \checkmark \quad 0 + 0 \leq 60 \checkmark$$

CP	$P = 8x + 4y$
(0,0)	0
(0,11)	99
(11,0)	88
(6,5)	93

Max is (99) at (0,11)

26) $\begin{cases} 13x + 4y = 487 \\ 6x + 2y = 232 \end{cases}$
 x = # cost per bush
 y = cost per tree.

27) $\bar{x} = 41.75$
 Med = 46 $\leftarrow \frac{46+46}{2}$
 Mode = 46

25) a) $y - 9 = .01(x - 320)$
 $P = .01x + 5.8$

b) $y - 9 = -.005(x - 200)$
 $P = -.005x + 10$

c) $s = d \quad .01x + 5.8 = -.005x + 10$
 $\therefore x = 280$ throw. Box
 $P = \$8.60$ each.

28) increase more spread

29) 36%

b) 2669 min

30) $\frac{7.7 - 4.4}{4.1} \approx 80.5\%$