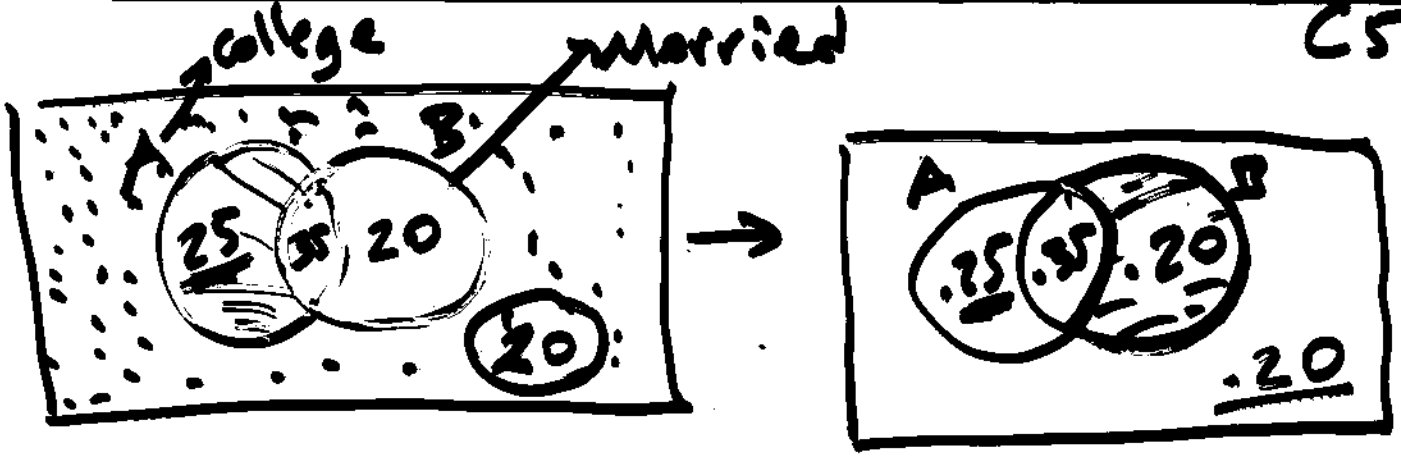

a) Unmarried = B'

Unmarried College Gr. = $B' \cap A$

$P(B' \cap A) = 0.25$

or $P(B' \cap A) = P(A) - P(A \cap B) =$

$= 0.60 - 0.35 = 0.25$

b) $P(A' \cap B) = 0.20$

1st → CG

2nd → MCG

Example

X = # of computers sold

$p(0) = 0.10 \quad p(1) = 0.20 \quad p(2) = 0.30 \quad p(3) = 0.40$

purchased $500 apiece

will be sold at $1000 apiece

if not sold, will be returned to the manuf.

at $200 a piece.

$$h(X) = \text{profit} = 1000 \cdot X + 200(3 - X) - 1500$$

X	0	1	2	3
$p(x)$	0.10	0.20	0.30	0.40

$h(x)$	-900	-100	700	1500
$p(h(x))$	0.1	0.2	0.3	0.4

$$E(X) = (0)(0.10) + (1)(0.20) + (2)(0.30) + (3)(0.40)$$

$$= 2$$

$$E(h(X)) = (-900)(0.1) + (-100)(0.2) + (700)(0.3) + (1500)(0.4)$$

$$= \$700$$

Since $h(x)$ is linear,

$$E(h(X)) = E(800 \cdot X - 900) = 800 \cdot E(X) - 900$$

$$= 1600 - 900$$

$$= 700$$

$$V(X) = E(X^2) - [E(X)]^2$$

(X^2)	0^2	1^2	2^2	3^2
$p(x)$	.1	.2	.3	.4

$= 2$

	0	1	4	9
$p(x)$	.1	.2	.3	.4

$E(X^2) = 5$

$E(X^2) = (0)(.1) + (1)(.2) + (4)(.3) + (9)(.4)$

$E(X^2) = 5$

$V(X) = 5 - 2^2 = 1$

$V(\text{profit}) = V(h(x))$, since $h(x)$ is linear

$a = 800$

$b = -900$

$(h(x) = 800x - 900)$

$V(h(x)) = (800)^2 \cdot V(X)$

$= 640{,}000 \cdot (1)$

$V(h(x)) = 640{,}000$

$\text{Stdev}(h(x)) = \sqrt{640{,}000} = 800$