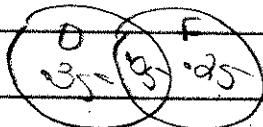


## Chapt 6 Review

①

B



$$1 - .35 - .05 - .25 \\ = .35$$



$$35\% \text{ of the } 200 = \\ (.35)(200) = 70$$

②

B

$$P(\text{female}) = \frac{\text{female}}{\text{Total}} = \frac{199}{331}$$

③

D

$P(\text{male or breakfast})$

$$\frac{151 + 191}{331} - \frac{66}{331} = \frac{257}{331}$$

C

$$P(\text{Breakfast} | \text{Female}) = \frac{125}{199}$$

⑤

No.  $\frac{66}{331}$  ac males that had breakfast

⑥

$P(\text{male} | \text{Breakfast}) = P(\text{Male})$

$$\frac{66}{191} = \frac{125}{331}$$

As you could have

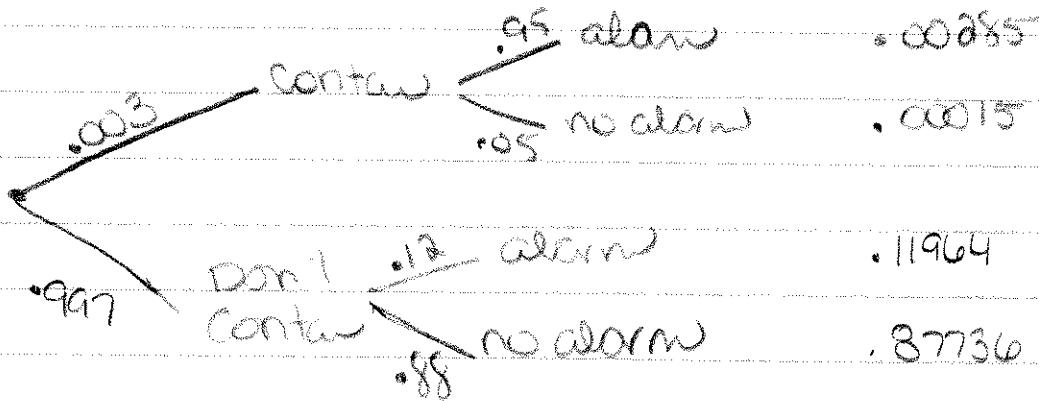
$$.35 \neq .40$$

also DNE

$$P(\text{Breakfast} | \text{Male}) = P(\text{Breakfast})$$

$$.5 \neq .58$$

7

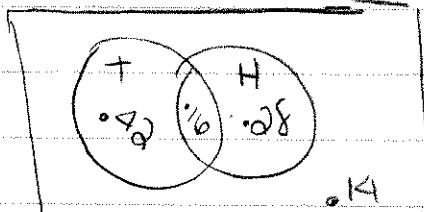


$P(\text{contam} \mid \text{alarm})$

$$\frac{0.0285}{0.0285 + 0.11964} = \frac{0.0285}{0.12249} = 0.233$$

8

A



$$1 - 0.42 - 0.16 - 0.28 = 0.14$$

9

$P(A \cup B)$

Because Ind,  $P(A \cup B) = (0.4)(0.5) = .2$

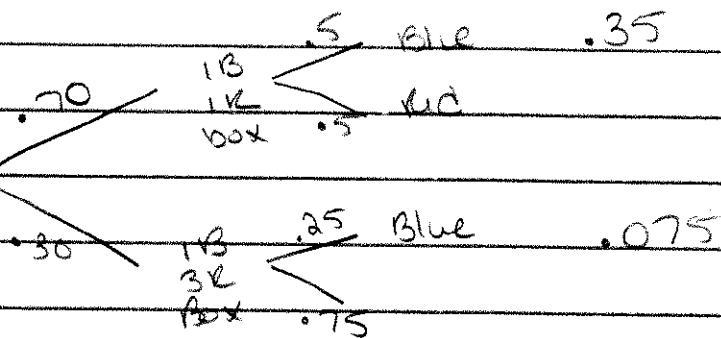
D General Addition Rule:

$$P(A) + P(B) - P(A \cap B)$$
$$(0.4) + (0.5) - (0.2) = 0.7$$

10) 7 boxes: 1B, 1R

3 boxes: 1B, 3R

E



$P(\text{Blue})$

$$= .35 + .075$$

↓

$$(.7)(.5) + (.3)(.25)$$

11)

If disjoint

D

$$P(A \cup B) \text{ would be } (.37) + (.41) = .78,$$

not .75

Using General Additive Rule

$$P(A \cup B) = P(A) + P(B) - P(A \cap B)$$

$$.75 = .37 + .41 - P(A \cap B)$$

$$.75 = .78 - P(A \cap B)$$

$$P(A \cap B) = .03$$

Ind:

$$P(B|A) = P(B)$$

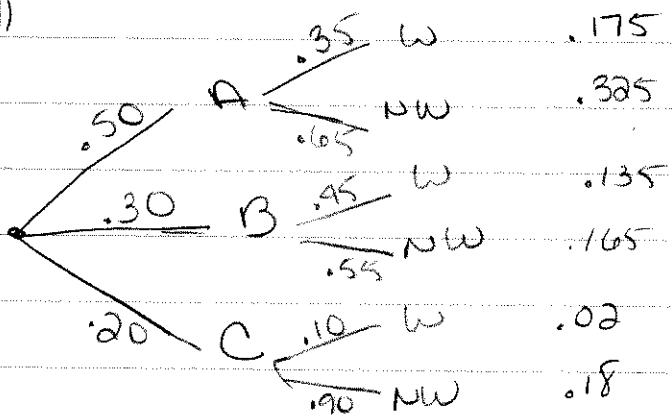
$$\frac{.03}{.37} = .41 \rightarrow .081 \neq .41 \quad \text{Not Ind}$$

$$(12) P(\text{sonal E-mail})$$

$$= \frac{2}{164} = \frac{1}{82}$$

(13) Since 20% of subscriber get both year number assignment needs two of the ten to represent this type of subscriber.

$$(14)$$



$$(15) P(W) =$$

$$\begin{aligned} & .325 + .175 + .02 \\ & = .33 \end{aligned}$$

$$(16) P(C|W)$$

$$\underline{.02} = .061$$

$$.33$$

$$(17) P(A \text{ and not } W)$$

$$= .325$$

$$(18) P(A \text{ or } C | NW)$$

$$= \underline{.325 + .18} = \underline{.505} = .754$$

$$\underline{.325 + .18 + .05} = .67$$

(19) Component: Drawing Name

Model: Assign numbers 00-89 as follows

Math: 0 - 12

Science: 13 - 24

English: 25 - 42

S.S.: 43 - 52

Other: 53 - 89

Trial: Use a random digit table

until you get one trial in each

Math, Science, English, S.S.

and 2 from other

Response Variable: Number of Draws  
needed to get sample

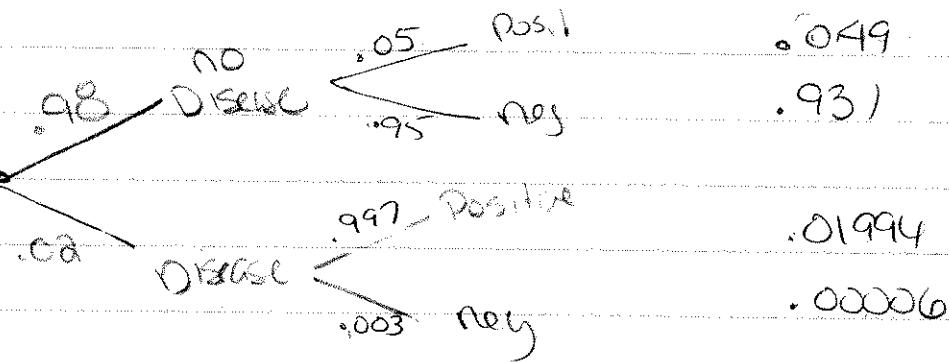
Example: 19, 22, 39, 57, 34, 05, 75, 62, 87, 13, 47

It took 11 Draws

\* Skip 9 because it's  
assigned to others

Note: This is typically as far as you  
have to go on the AP Exam unless they  
tell you how many trials to run

(2)



a)  $P(\text{Positive})$

$$\begin{aligned} & 0.49 + 0.01994 \\ & = 0.06894 \end{aligned}$$

b)  $P(\text{no disease} | \text{positive})$

$$\frac{0.49}{0.49 + 0.01994} = \frac{0.49}{0.06894} = 7.11$$

(2)

$P(\text{cheats or steals})$

$$0.55 + 0.55 - (0.55)(0.55)$$

B

$$0.55 + 0.55 - 0.3025$$

$$0.7975$$

(22)

error happens .02

P(no error 234 pages and error on 1 page)

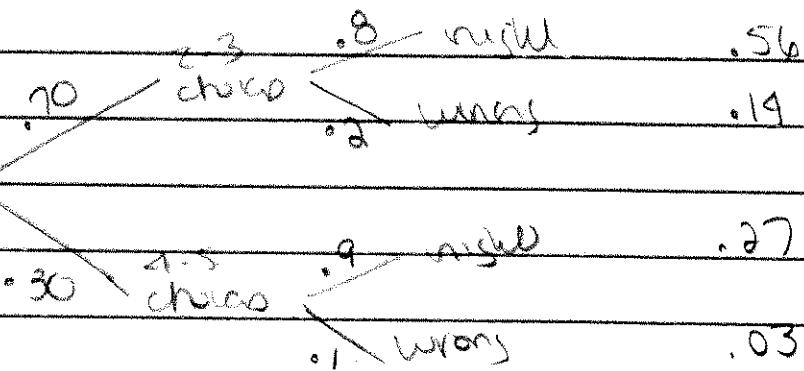
A

$$(0.98)^{234} (0.02)$$

$$.000177$$

$$.017\% = .02\%$$

(23)



P(right)

$$.56 + .03 = .59$$

(24)

Law of Averages

A

(25)

$$P(A \cap B) = P(A) + P(B) - P(A \text{ and } B)$$

$$.55 = .3 + .4 - P(A \text{ and } B)$$

C

$$.55 = .7 - P(A \cap B)$$

$$P(A \cap B) = .15$$

$$P(A|B) = \frac{.15}{.4} = .375$$

(26)

A - B

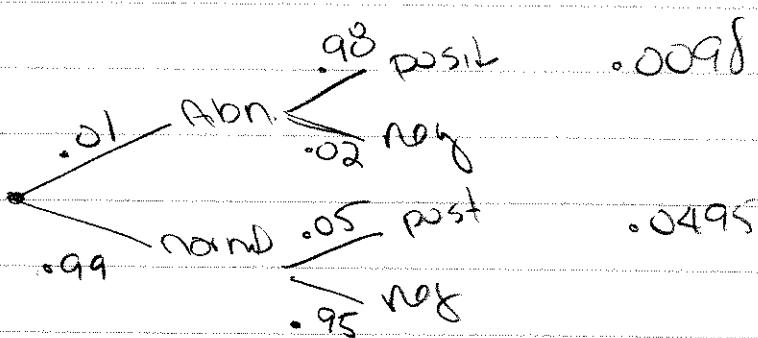
+ → more A survived

- → more B survived

The dotplot shows that getting a difference of three is not unusual, so we should not conclude that Drug A is better.

(27)

C

 $P(\text{abn})$ 

$$.0098 + .0495 = .0593$$

(28)

E

The more trials conducted the more likely you are to get closer to the probability.

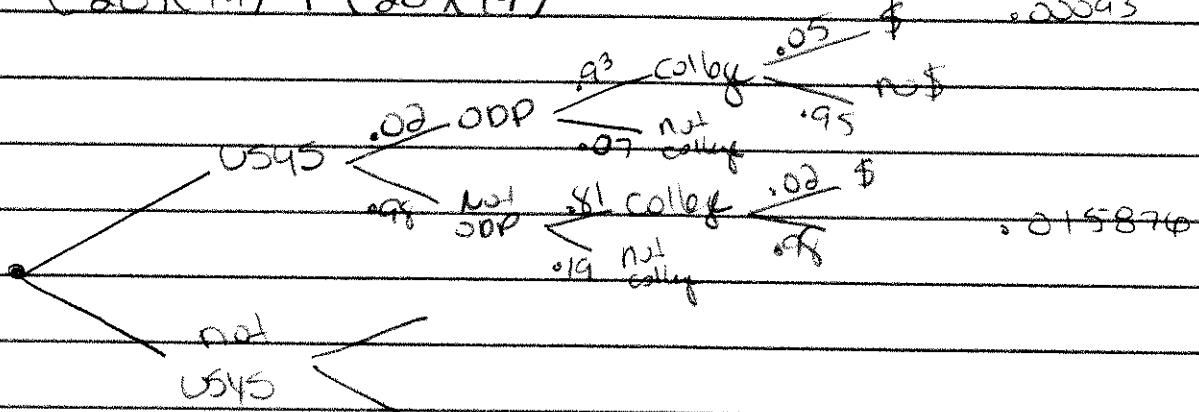
(29)

D

$P(1^{\text{good}} \text{ 2}^{\text{nd}} \text{ Difd or } 1^{\text{st}} \text{ def. 2}^{\text{nd}} \text{ good})$

$$\left(\frac{17}{20}\right)\left(\frac{3}{19}\right) + \left(\frac{3}{20}\right)\left(\frac{17}{19}\right) = .00093$$

(30)



a)  $P(\$ | \text{ODP}) =$   
 $(.02)(.93)(.05)$   
 $= .00093$

b)  $P(\text{college}, \$ | \$)$   
 $.00093 + .015876$   
 $= .01680$

c)  $P(\text{not ODP} | \$)$   
 $.015876 = .9447$   
 $.015876 + .00093$

(31)  $P(\text{hs. and not purchase})$

A = 3939

23,555

= .1672

(32)  $P(A \text{ or } B) = P(A) + P(B) - P(A \cap B)$

.68 = .43 + .26 - P(A ∩ B)

D .68 = .69 - P(A ∩ B)

$P(A \cap B) = .01$

not disjoint -  
 $P(A) + P(B)$  would  
equal .69

Find:

$P(B|A) = P(B)$

$\frac{.01}{.43} = .26$

$.02 \neq .26$

no

(33)  $P(\text{Dessert}) = \frac{74}{110} = .67$

D

(34)  $P(\text{Appetizer}) = \frac{42}{110} = .38$

A

(35)  $P(\text{Dessert only or App only}) = \frac{44}{110} + \frac{12}{110} = .509 \approx 51\%$

C

(36)  $P(\text{Dess only}) = \frac{44}{110} = .4$

D  $P(\text{App only}) = \frac{12}{110} = .11$

$P(\text{both}) = \frac{30}{110} = .27$

\*  $P(\text{App}) = .38$

$P(\text{not Dess}) = \frac{36}{110} = .33$

(37)  $P(\text{App/Dess}) = \frac{30}{74}$

C

= .405

(38)  $P(\text{Dess} | \text{No app}) = \frac{44}{68} = .647$

D

$$39) P(y|F) = \frac{210}{375} = .56$$

$$B) P(y|S) = \frac{180}{390} = .463$$

$$P(y|J) = \frac{110}{355} = .310$$

$$P(y|S) = \frac{130}{275} = ..481$$

Fresh, Senior, Sophomore, Junior

$$40) P(\text{Soph}|y_S) = \frac{180}{630} = .286$$

$$41) \text{Overall } \frac{630}{1390} = 0.453$$

B) Compare to previous #39

Sophomore's Closet w/ .463