

46 5.2 A be the individual is more than 6 feet tall

B be the individual is a professional player.

$P(A|B) > P(B|A)$ I think Most of player is more than 6 feet.

50. a. $P(a) = .05$

b. $P(b) = P(M \cap Pr) = ~~0.5~~ 0.1 \cdot .05 + .07 = .12$

c. $P(c) = \frac{1}{2} 1 - ~~.56~~ = .44$

$P(c) = 1 - .56 = .44$

d. $P(d) = .08 + .07 + .12 + .1 + .05 + .07 = .49$

$P(d) = .02 + .07 + .07 + .02 + .05 + .02 = .25$

e. $P(e) = \frac{.68}{.04 + .08 + .03} = .533$

f. $P(f) = \frac{.08}{.08 + .10} = .444$

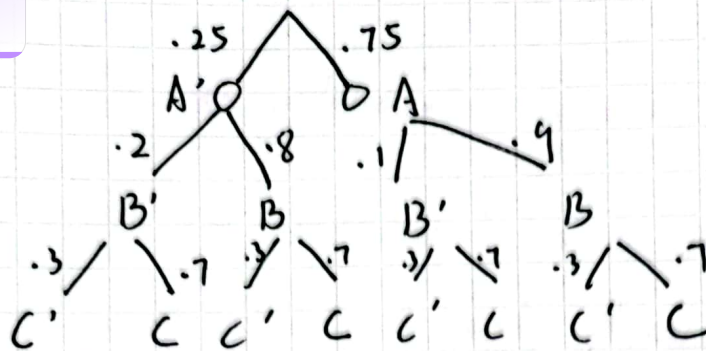
$P(f) = 1 - P(f) = .556$

58.
$$P(A \cup B | C) = \frac{P[(A \cap C) \cup (B \cap C)]}{P(C)}$$

$$= \frac{P(A \cap C) + P(B \cap C) - P(A \cap B \cap C)}{P(C)}$$

$$= P(A|C) + P(B|C) - P(A \cap B|C)$$





b. $P(A \cap B \cap C) = .75 \times .9 \times .8 = .54$

c. $P(B \cap C) = .54 + \cancel{.25} .25 \times .8 \times .7 = .68$

d. $P(C) = .54 + .045 + .14 + .015 = .74$

e. $P(A|B \cap C) = \frac{.54}{.68} = .7941$



A

$$a. P(B') = 1 - .7 = .3$$

b. S.t C be the event that ~~non~~ at least one of them of succ

$$P(\bar{C}) = .6 \times .3 = .18$$

$$P(C) = 1 - .18 = .82$$

$$c. P = \frac{.3 \times .4}{.82} = .146$$

$$72. P(A_1 \cap A_2) = .11$$

$\Rightarrow A_1$ and A_2 are not independent

$$P(A_1) \cdot P(A_2) = .055$$

$$P(A_1 \cap A_3) = .05$$

$$P(A_1) \cdot P(A_3) = .0616$$

$\Rightarrow A_1$ and A_3 are not independent

$$P(A_2 \cap A_3) = .07$$

$$P(A_2) \cdot P(A_3) = .07$$

$\Rightarrow A_2$ and A_3 are independent.

$$80. P = (1 - .9 \times .9) + (.9 \times .9) - .81 \times (.9 + .9 - .81) = .9981$$

$$82. a. P = (.7)^3 = .343$$

$$b. P = 1 - .343 = .657$$

$$c. P = (.3)^2 (.7) \times 3 = .189$$

$$d. P = P(C) + (.3)^3 = .216$$

$$e. P = \frac{P(C)}{P(C) + P(d)} = \frac{.343}{.973} = .353$$



1. X can be 2, 3, 4, 5

$X=2$: 12000

$X=3$: 12300

$X=4$: 12340

5. No. If a people we hear is sit or stand is an experiment, thus we have infinite sample space, but Y has only two possible values.

8. $Y=3$: SSS

$Y=4$: FSSS

$Y=5$: SFSSS, FFSSS

$Y=6$: SSFSSS, SFFSSS, FSFSSS, FFFSSS

$Y=7$: SSFFSSS, SFFSFSSS, FFFSFSSS, FFSFSSS

FSFFSSS, SFFFSSS, FFFFSSS.

10. a. Possible values: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10

b. -4, -3, -2, -1, 0, 1, 2, 3, 4, 5, 6

c. 0, 1, 2, 3, 4, 5, 6

d. 0, 1, 2



12. a. $P(a) = .05 + .10 + .12 + .14 + .25 + .17 = .83$

b. $P(b) = 1 - P(a) = .17$

c. $P(c_1) = .05 + .10 + .12 + .14 + .25 + .17 = .83$

$P(c_2) = .05 + .1 + .12 = .27$

23. a. $P(x=2) = .39 - .19 = .20$

b. $P(x>3) = .33$

c. $P(2 \leq x \leq 5) = .92 - .19 = .73$

d. $P(2 < x < 5) = .92 - .39 = .53$

25. $P(0) = p$

$P(1) = (1-p)p$

$P(2) = (1-p)^2 p$

so, $P(y) = (1-p)^y p$

