Homework Two

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2/8/2022

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#13 a.) P(a1 union a2) = .22 + .25 - .11 = .36

b.) 1 - .36 = .64

c.) .22 + .25 + .28 - .11 - .05 - .07 + .01 = .51

d.) 1 - .51 = .49

e.) .28 - (.05 + .07 - .01) = .17

f.) .49 + .28 = .77

#18 a.) total number of bills = 15 1 - (5/15) = .6667 probability that at least two bills must be selected to obtain a first $10 bill is 0.6667

#21 a.) p(M,H) = 0.1

b.) P(Low Auto) = P(L,N) + P(L,L)+P(L,M)+P(L,H) = (0.04) + (0.06) + (0.05) + (0.03) = 0.18

c.) P(Same Category) = P(L,L) + P(M,M) + P(H,H) = (0.06) + (0.2) + (0.15) = 0.41

d.) 1-(0.41)= 0.59

e.) 0.18 + 0.19 - 0.06 = 0.31

f.) 1 - 0.31 = 0.69

#32 a.) (5 * 4 * 3 * 4) = 240

b.) (1 * 1 * 3 * 4) = 12

c.) (4 * 3 * 3 * 3) = 108

d.) n(total number of selections)-n(Number of selections without Sony brand) 240 - 108 = 132

e.) 132/240 = .55

#35 a.) 10!/(5!(10-5!)) = 252 252/ 42504 = .0059

b.) 252 + 56 + 6 / (42504)= 0.0074

c.) 1 - (314/42504) = 0.9926

d.) 0.0471 + 0.1028 + 0.2016 + 0.0001 - 0.0013 - 0.0059 = 0.3441

#42 a.) 180 + 90 + 120 = 390

b.) 600 + 255 + 255 = 1110 1110/(15!/5!(15-5))= .3696

#50 a.) 0.05

b.) 0.05 + 0.07 = 0.12

c.) 0.11 + 0.27 + 0.18 = 0.56 short sleeve probability

.08 + .22 + .14 = .44 long sleeve probability

d.) .27 + .22 = .49 medium shirt probability

0.16 + 0.09 = 0.25 = long sleeve probability

e.) 0.08/0.15 = 0.53

f.) 0.08 + 0.01 = .18 = 0.08/0.18 = 0.44 short sleeved medium plaid

0.08 + 0.1 = 0.18 = 0.1 / 0.18 = ,56 long sleeved givien shirt just sold was medium plaid

#51 a.) P = .08 * 0.39 P = 3.12%

b.) P = 0.08 * 0.30 P = 2.40%

#54 a.) 0.11/0.22 = 0.5

b.) 0.01/0.22 = 0.045

c.) (0.11 + 0.05 - 0.01)/.22 = 0.682

d.) .22 + .25 + .28 - .11 - .07 + .01 = .53 0.01/.53 = 0.019

#64 a.) (.7 * .5) + (.5 * .3) + (.3 * .2) = .56

b.) (.5 * .7)/ .56 = .625

#71 a.) 1 - P(a) 1-0.2 = 0.8 1-0.5 = 0.5 If Asian project is not successful, then the probability the European project is also not successfull is = 0.5

b.) (0.2 + .5) - (.2 * .5)= .6

c.) 0.2 - (.2 * .5)/(.6)= 0.1667

#78 a.) P(A) = 0.95 P(B) = 1 - P(A) = 0.05 1 - (0.05 * 0.05 * 0.05 * 0.05 * 0.05 * 0.05) = .9999996875 1 -(0.95 * 0.95 * 0.95 * 0.95 * 0.95 * 0.95) = .2262190625

#87 a.) .55 + .65 - .8 = .4

b.) .4/.7= .5714

c.) .65 * .70 = .455

d.) (0.88-.55)/(1-0.55)= .7333