IS 606: WEEK 2 ASSIGNMENT SOLUTIONS

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2.6 DICE ROLLS:

DICE ROLLS	1	2	3	4	5	6
1	1,1	1,2	1,3	1,4	1,5	1,6
2	2,1	2,2	2,3	2,4	2,5	2,6
3	3,1	3,2	3,3	3,4	3,5	3,6
4	4,1	4,2	4,3	4,4	4,5	4,6
5	5,1	5,2	5,3	5,5	5,5	5,6
6	6,1	6,2	6,3	6,6	6,5	6,6

a) Getting sum of 1:
The getting sum of 1 is 0/36 = 0. The sum of 1 when rolling two dices is 0.

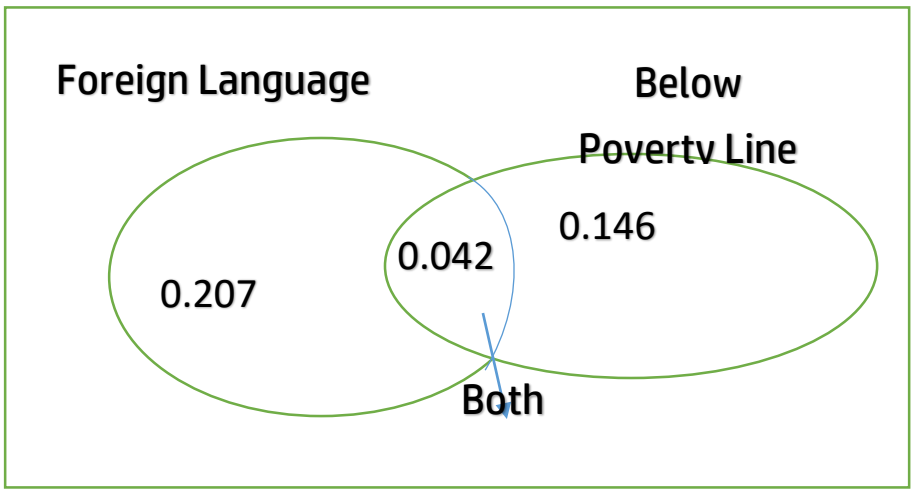
b) Getting a sum of 5:
1,4: 2,3 : 3,2 : 4,1 = 4/36 = 0.1111 or 11.11%

c) Getting a sum of 12:
The number of time the sum of twelve (6,6) occurs is once i.e
1/36 = 0.0278 or 2.7778%

2.8 Poverty and language:

a) NO.

b)



c) P(A and B) = P(A) * P(B) = 0.146 * (1 – 0.207)
= 0.146 * 0.793
= 0.884
= 88.84%

d) P(A or B) = P(A) + P(B) - P(A and B)

= 0.146 + 0.207 -0.042

= 0.311

= 31.1%

e) $P(A\ and\ B)^c$= 1 – P(A and B)

= 0.854 * 0.793

= 0.677

=67.72%

2.20

(a) Let A be the Probability of male with blue eye; B = Probability of female with blue eye.

P(A) = 114/204, P(B)= 108/204 and P(A∩B) = 78/204

P(A∪B) = P(A) + P(B) - P(A∩B) = 0.5588 + 0.5294 – 0.3824

= 0.7058

(b) P(B|A) =P(B∩A)/P(A) = (78/204)/(114/204)

=0.6842

(c) P(female with blue eye| male with brown eyes) = 19/54 = 0.3519

Also P(female with blue eyes| male with green eye) = 11/36 = 0.3056

(d) NO, the event is dependent.