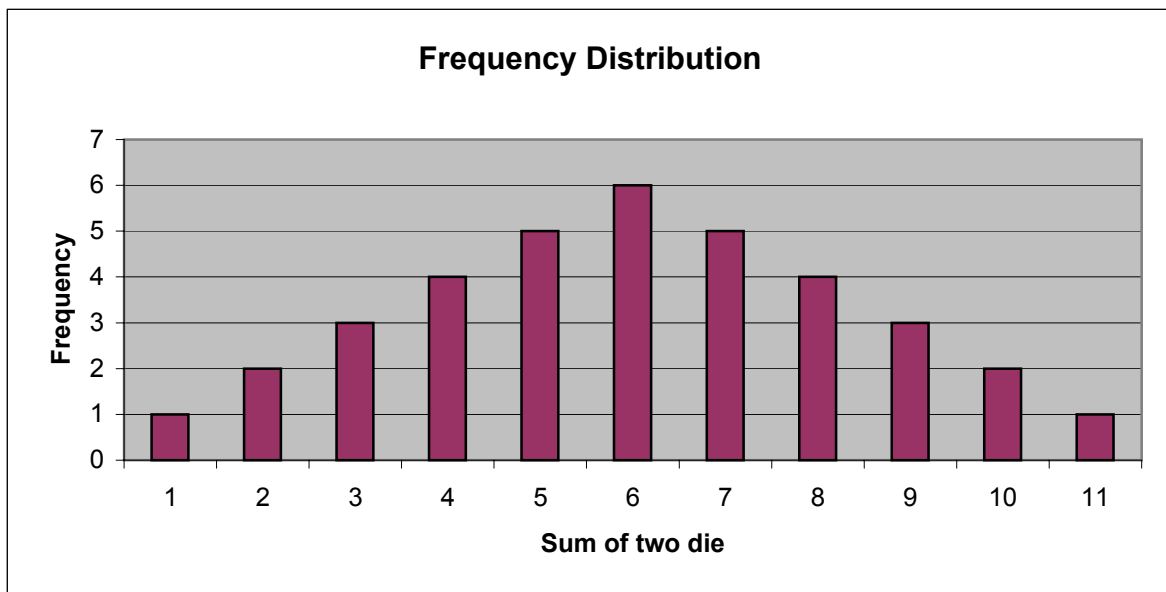


### Dice Distribution

	1	2	3	4	5	6
1	2	3	4	5	6	7
2	3	4	5	6	7	8
3	4	5	6	7	8	9
4	5	6	7	8	9	10
5	6	7	8	9	10	11
6	7	8	9	10	11	12

Event	Freq	Prob	EV	AD	P*AD	F*AD	Var
2	1	0.028	0.056	5	0.139	5	0.694
3	2	0.056	0.167	4	0.222	8	0.889
4	3	0.083	0.333	3	0.250	9	0.750
5	4	0.111	0.556	2	0.222	8	0.444
6	5	0.139	0.833	1	0.139	5	0.139
7	6	0.167	1.167	0	0.000	0	0.000
8	5	0.139	1.111	1	0.139	5	0.139
9	4	0.111	1.000	2	0.222	8	0.444
10	3	0.083	0.833	3	0.250	9	0.750
11	2	0.056	0.611	4	0.222	8	0.889
12	1	0.028	0.333	5	0.139	5	0.694
	36	1.000	7.000	30	1.944	70	5.833
						1.944	2.415



### Alternative Computation

Event	Freq	F*E	Avg	F*Avg	Dev	Var
2	1	2	7	7	-5	25
3	2	6	7	14	-4	32
4	3	12	7	21	-3	27
5	4	20	7	28	-2	16
6	5	30	7	35	-1	5
7	6	42	7	42	0	0
8	5	40	7	35	1	5
9	4	36	7	28	2	16
10	3	30	7	21	3	27
11	2	22	7	14	4	32
12	1	12	7	7	5	25
	36	252		252	0	210
		7				5.83

5.1-13 Probability of rolling even on both die =  $9/36 = 1/4$

	1	2	3	4	5	6
1	2	3	4	5	6	7
2	3	4	5	6	7	8
3	4	5	6	7	8	9
4	5	6	7	8	9	10
5	6	7	8	9	10	11
6	7	8	9	10	11	12

5.1-13 Probability of total being atleast 7 =  $(1+2+3+4+5+6)/36 = 21/36 = 7/12$

	1	2	3	4	5	6
1	2	3	4	5	6	7
2	3	4	5	6	7	8
3	4	5	6	7	8	9
4	5	6	7	8	9	10
5	6	7	8	9	10	11
6	7	8	9	10	11	12

A: Total is 4  $P(A) = 3/36 = 1/12$

	1	2	3	4	5	6
1	2	3	4	5	6	7
2	3	4	5	6	7	8
3	4	5	6	7	8	9
4	5	6	7	8	9	10
5	6	7	8	9	10	11
6	7	8	9	10	11	12

B: Total is even  $P(B) = 18/36 = 1/2$

	1	2	3	4	5	6
1	2	3	4	5	6	7
2	3	4	5	6	7	8
3	4	5	6	7	8	9
4	5	6	7	8	9	10
5	6	7	8	9	10	11
6	7	8	9	10	11	12

C: One die contains 3  $P(C) = 12/36 = 1/3$

	1	2	3	4	5	6
1	2	3	4	5	6	7
2	3	4	5	6	7	8
3	4	5	6	7	8	9
4	5	6	7	8	9	10
5	6	7	8	9	10	11
6	7	8	9	10	11	12

$$P(A \cup B) = P(B) = 1/2$$

$$P(A \cup C) = P(A) + P(C) - P(A \cap C) = 3/36 + 12/36 - 2/36 = 13/36$$

$$P(A|B) = 3/18 = 1/6$$

$$P(A|B) = P(A \cap B) / P(B) = (3/36) / (1/2) = 1/6$$

