Section 9-1 and 9-2 **Probability**

Random Experiment—act of doing something and there is no way of telling beforehand how the result will come out.

If the outcomes of a random experiment are equally likely, then

$$\text{Probability} = \frac{\text{number of outcomes in the event (\# of successes)}}{\text{total number of possibilities (sample space)}}$$

symbolically: $P(E) = \frac{n(E)}{n(S)}$

Cards (52 card deck, 13 each of diamonds, hearts, clubs and spades) Face cards: jack, queen, king

1 P(jack)

2. P(queen of hearts)

3. P(red card)

4. P(face card)

5. P(2 or 5)

6. P(card is between 7 and 9 inclusive)

Dice (rolling 2 dice)

Sample space =

	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, 4)	(5, 5)	(5, 6)
6	(6, 1)	(6, 2)	(6, 3)	(6, 4)	(6, 5)	(6, 6)

7. P(sum of 5)

8. P(sum of 7)

9. P(doubles)

10. P(sum of 2)

11. P(sum of 13)

12. P(sum is at most 8)