

1. A die is tossed and then a special coin is tossed. The die is a standard 6-sided die with 1, 2, 3, 4, 5, or 6 pips on the appropriate sides. The coin has one pip on one side of the coin and two pips on the other side of the coin.

	1	2	3	4	5	6
1	2	3	4	5	6	7
2	3	4	5	6	7	8

- a. In how many ways can a sum of 2 be obtained? **1 way**
- b. In how many ways can a sum of 7 be obtained? **2 ways**
- c. In how many ways can a sum of 8 be obtained? **1 ways**

2. A salesman makes two calls each day. The results can be a sale (S), a no sale (N), or a maybe (M). List the possible outcomes for one day.

S = sale

N = no sale

M = maybe

{SS, SN, SM, NS, NN, NM, MS, MN, MM}

3. A fair coin is tossed 4 times. Each time, the outcome is either a head (H) or a tail (T). List the possible outcomes.

{HHHH, HHHT, HHTH, HHTT, HTHH, HTHT, HTTH, HTTT, THHH, THHT, THTH, THTT, TTHH, TTTH, TTTT, }

4. Contestants at a bazaar spin a wheel that is marked with 4 possible outcomes. Three of the outcomes are labeled Lose and the other outcome is labeled Prize. If the contestant lands on Prize, he/she gets a prize and is allowed to spin the wheel again. If the contestant lands on Loser, then the game is over for that contestant. Each contestant pays \$10 to play and can win at most 4 Prizes. List the possible outcomes for any given contestant.

{L, PL, PPL, PPPL, PPPP}

5. A pair of tetrahedral dice is tossed. The sides of each tetrahedral die are labeled with 1, 2, 3, or 4 pips.

	1	2	3	4
1	2	3	4	5
2	3	4	5	6
3	4	5	6	7
4	5	6	7	8

- a. In how many ways can a sum of 1 be obtained? **0 ways**
- b. In how many ways can a sum of 2 be obtained? **1 way**
- c. In how many ways can a sum of 8 be obtained? **1 way**

6. Ten strangers sit in a circle. They get acquainted with the two persons to their left and the two persons to their right. After a few minutes, they all stand up and shake hands with people with whom they have not become acquainted. How many handshakes will take place.

Note: When person 5 shakes hands with person 2, that is counted as one handshake. It is not another handshake when person 2 shakes hands with person 5.

	1	2	3	4	5	6	7	8	9	10		
1				X	X	X	X	X				
2					X	X	X	X	X			
3						X	X	X	X	X		
4							X	X	X	X		
5								X	X	X		
6									X	X		
7										X		
8												
9												
10												

There are 25 handshakes.