

Answer Key

1.
 - a. Repetitions aren't allowed, order doesn't matter: Is a set (combination).
 - b. Repetitions aren't allowed, order does matter: Is a permutation.
 - c. Repetitions are allowed, order does matter: Is an ordered list.
 - d. Repetitions are allowed, order doesn't matter: Is an unordered list.

		A	B	C	D	
2.	a.	A	(A,A)	(A,B)	(A,C)	(A,D)
		B	(B,A)	(B,B)	(B,C)	(B,D)
		C	(C,A)	(C,B)	(C,C)	(C,D)
		D	(D,A)	(D,B)	(D,C)	(D,D)
		A	B	C	D	
	b.	A	(A,A)	(A,B)	(A,C)	(A,D)
		B		(B,B)	(B,C)	(B,D)
		C			(C,C)	(C,D)
		D				(D,D)

3.
 - a. There are 36 total outcomes, and 6 total doubles. $6/36 = 1/6$
 - b. Double with a sum of less than 4 include just (1,1), so $1/36$.
 - c. (1,5), (5,1), (5,2), (5,3), (5,4), (5,5), (5,6), (6,5). So, 8
 - d. (1,5), (5,1), (5,2), (5,3), (5,4), (5,6), (6,5). So, 7
4.
 - a. H, T
 - b. H-H, H-T, T-H, T-T
 - c. H-H-H, H-H-T, H-T-H, H-T-T, T-H-H, T-H-T, T-T-H, T-T-T
5.
 - a. 4
 - b. They are equally likely
 - c. 2
 - d. 6
 - e. 4