Name: _____ Date: _____

Compound Probability: Mutually Exclusive vs. Overlapping

- ☆ Compound Event
  - Combines two or more events, using the word **and** or the word **or**.
- ☆ Mutually Exclusive
  - Events that **cannot** occur at the same time (have **no** common outcomes).
- ☆ Overlapping
  - Events having **at least one common outcome**.

Determine if the following events are mutually exclusive or overlapping.

_____ 1. has ridden a roller coaster; has ridden a Ferris wheel

_____ 2. rolling an odd number on a die, rolling an even number

_____ 3. a person has brown hair; has brown eyes

_____ 4. the correct answer is chosen; the answer A is chosen.

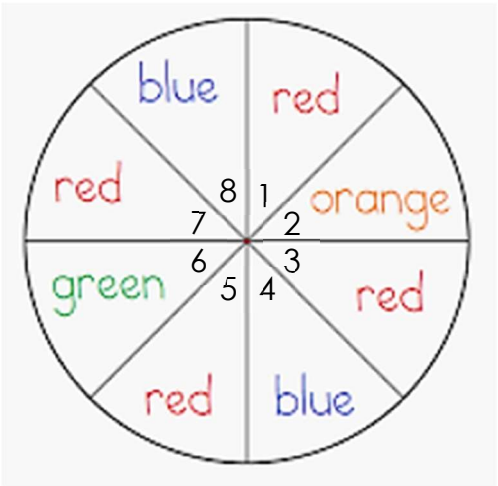
_____ 5. a student is a senior; is a junior

Overlapping Events

Probability that non-mutually exclusive events
A and B or both will occur expressed as:

P(A or B) = P(A) + P(B) – P(A and B)

1. P(red or multiple of 3)
2. P(blue or odd)
3. P(green or orange)
4. P(perfect square or prime)
5. P(perfect square or red)



6. A fridge contains 13 bottles of sports drink: 5 lemon-lime, 4 orange, and 4 fruit-punch. You randomly grab a sports drink. What is the probability it is lemon-lime or orange?

7. A jar contains 6 orange marbles numbered one to six. The jar also contains three green marbles numbered one to three. You randomly pick a marble. What is the probability it is green or has a number less than five?

8. A group of senior citizens have won free vacation packages. The vacation to Bermuda is chosen by 25% of them, 60% choose Alaska, and 15% choose Costa Rica. What is the probability that one randomly chosen senior citizen chooses to vacation in Bermuda or Costa Rica?

9. Suppose 80% of people can swim. Suppose 70% of people can whistle. Suppose 55% of people can do both. What percentage of people can swim or whistle?

10. At Hillgrove, 60% of the students carry a backpack or a wallet. 40% carry a backpack, and 30% carry a wallet. If a student is selected at random, find the probability that the student carries both a backpack and a wallet.

11. Find the probability of picking a female or a person from Florida out of the committee members.

	Female	Male
Florida	8	4
Alabama	6	3
Georgia	7	3