~Independent and Dependent Notes~

* Independent Events:
* Independent Event Formula:

**Example 1:**

A coin is tossed and a 6-sided die is rolled. Find the probability of landing on the head side of the coin and rolling a 3 on the die.

 **P(Head and 3)**

**Example 2:**

A card is chosen at random from a deck of 52 cards. It is then replaced and a second card is chosen. What is the probability of choosing a jack and an eight?

 **P(Jack and 8)**

**Example 3:**

A jar contains 3 red, 5 green, 2 blue and 6 yellow marbles. A marble is chosen at random from the jar. After replacing it, a second marble is chosen. What is the probability of choosing a green and a yellow marble?

 **P(Green and Yellow)**

**Example 4:**

A school survey found that 9 out of 10 students like pizza. If three students are chosen at random with replacement, what is the probability that all three students like pizza?

**P(Like and Like and Like)**

* Dependent Events:
* Dependent Event Formula:

**Example 5:**

A jar contains 3 red, 5 green, 2 blue and 6 yellow marbles. A marble is chosen at random from the jar. A second marble is chosen **without** replacing the first one. What is the probability of choosing a green and a yellow marble?

**P(Green and Yellow)**

**Example 6:**

An aquarium contains 6 male goldfish and 4 female goldfish. You randomly select a fish from the tank, **do not** replace it, and then randomly select a second fish. What is the probability that both fish are male?

 **P(Male and Male)**

**Example 7:**

A random sample of parts coming off a machine is done by an inspector. He found that 5 out of 100 parts are bad on average. If he were to do a new sample, what is the probability that he picks a bad part and then, picks another bad part if he **doesn’t** replace the first?

**P(Bad and Bad)**