Probability

*How **likely** something is to happen.*

Many events can't be predicted with total certainty. The best we can say is how **likely** they are to happen, using the idea of probability.

Tossing a Coin

When a coin is tossed, there are two possible outcomes:

- heads (H) or
- tails (T)

We say that the probability of the coin landing **H** is ½

And the probability of the coin landing **T** is ½

Throwing Dice

When a single <u>die</u> is thrown, there are six possible outcomes: **1, 2, 3, 4, 5, 6**.

The probability of any one of them is *1/6*

In general:

Probability of an event happening =

Number of ways it can happen

Total number of outcomes

Example: the chances of rolling a "4" with a die

Number of ways it can happen: 1 (there is only 1 face with a "4" on it)

Total number of outcomes: 6 (there are 6 faces altogether)

So, the probability = *1/6*

Example: there are 5 marbles in a bag: 4 are blue, and 1 is red. What is the probability that a blue marble gets picked?

Number of ways it can happen: 4 (there are 4 blues)

Total number of outcomes: 5 (there are 5 marbles in total)

So, the probability = *4/5* = 0.8

Sum of Two Dice Probabilities (A)

Find the probability of each sum when two dice are rolled.

P(≥3) =   P(≤8) =

P(<10) =   P(<12) =

P(<5) =   P(<3) =

P(≥10) =   P(≥12) =

P(12) =   P(>4) =

P(>5) =   P(≥10) =

P(5) =   P(<12) =

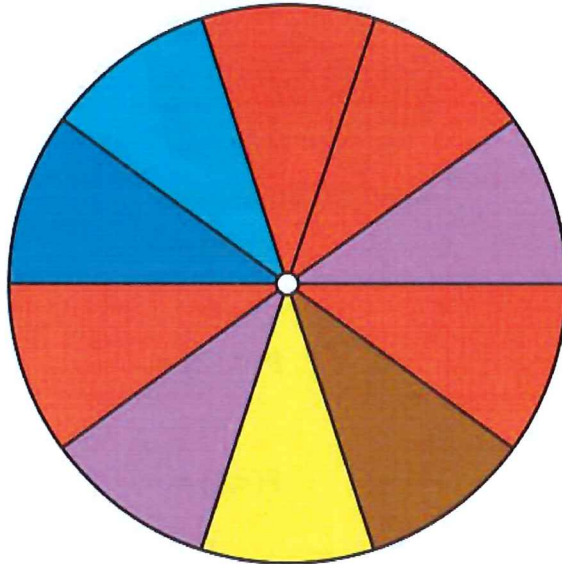P(<7) =   P(11) =

Spinner Probabilities (A)

Name: _____   Date: _____

Calculate the probability of your spinner landing on each situation.

1. What is the probability of the spinner landing on **cyan** in a single spin?

2. What is the probability of the spinner landing on **brown** in a single spin?

3. What is the probability of the spinner landing on **blue** in a single spin?

4. What is the probability of the spinner landing on **purple** in a single spin?

5. What is the probability of the spinner landing on **purple OR yellow** in a single spin?

6. What is the probability of the spinner **NOT** landing on **red** in a single spin?