Theoretical Probability Notes Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Probability** is the measure of how \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

There are **three** ways to represent probability:

1. 2. 3.

Impossible Equally Likely Certain

Percent

Fraction

Decimal

**Theoretical Probability** is the likelihood of an event to occur, as determined by reason, or in theory.

 **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

Examples:

1. What is the probability of a fair coin landing on heads?

 $P\left(heads\right)= \frac{\# of ways the event can occur}{all possible outcomes}$

2. What is the probability of a fair number cube landing on an even number?

 $P\left(even\right)= \frac{\# of ways the event can occur}{all possible outcomes}$

3. What is the probability of a card being pulled from a deck and being a heart? $P\left(heart\right)= \frac{\# of ways the event can occur}{all possible outcomes}$

4. On a fair number cube:

 a. P(2) = b. P(greater than 4) = c. P(0) =

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**Pause the video and try these on your own!**

**Then press play and check your answers with a color pen.**

**In a bag of marbles, there are 3 red, 4 blue, and 3 yellow.**

1. P(yellow) = 2. P (blue) = 3. P(red or blue) =

**There is a spinner cut into 8 equal sections shown below.**

4. P(red) = 5. P (blue) =

6. P (yellow or orange) = 7. P (green or blue) =