

1/16/19

# Lesson 1.2.2

can explain the difference between theoretical and experimental probability.

Coin: heads or tails

2 possible outcomes

$$TP \text{ (tails)} = \frac{1 \text{ tails}}{2 \text{ sides}} = \frac{1}{2}$$
 ← What SHOULD happen

↑  
theoretical probability

Experiment

	heads	tails

$$EP \text{ (tails)} = \frac{40 \text{ tails}}{84 \text{ total flips}}$$
 ↑  
experimental probability

$\frac{21}{57}$	$\frac{55}{110}$	$\frac{49}{81}$	
$\frac{12}{131}$	$\frac{80}{153}$	$\frac{34}{80}$	$\frac{29}{59}$
$\frac{51}{96}$	$\frac{28}{66}$	$\frac{23}{44}$	$\frac{32}{73}$



The more flips that we do in the experiment, our experimental probability should get closer to the theoretical probability.

theoretical vs experimental

# PROBABILITY

DESCRIBE THE LIKELIHOOD OF AN EVENT HAPPENING


think theoretical the probability of an event that you expect to happen

$$P(E) = \frac{\text{\# of favorable outcomes}}{\text{\# of possible outcomes}}$$


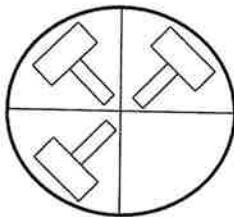
try it experimental the probability of an event when you do the experiment

$$P(E) = \frac{\text{\# of times the event occurs}}{\text{\# of trials}}$$

THE SPINNER BELOW IS USED TO FIND WHO WOULD WIN A BATTLE BETWEEN THOR AND THE HULK.



WHAT IS THE THEORETICAL PROBABILITY THOR WOULD WIN THE BATTLE?



USE A PAPER CLIP AND COMPLETE THE EXPERIMENT 10 TIMES. WHAT IS THE EXPERIMENTAL PROBABILITY THOR WILL WIN?