

Chapter 10 Test Review:

$$\frac{22}{45} = 50\%$$

$$\frac{27}{50} = 54\%$$

$$\frac{27}{40} = 67.5\%$$

.

Probability and Odds:

In a recent survey, it was reported that of drivers who recently got in an accident, 75% of them were NOT eating food when they crashed their car. Is it therefore safer to eat while driving? Why or why not?

100% of men over 6 feet tall wear shoes that are at least size 9. My friend wears shoes that are size 10. Is he over 6 feet tall? Why or why not?

Definitions:

All of the possible ways a particular situation could end up

Outcomes

One particular outcome or set of outcomes

Event

The number of possible outcomes

Sample Space

Example - roll a die

Outcomes: 1, 2, 3, 4, 5, or 6

Event: I get a 3 (1 way)

• I get an even number (3 ways)

• I get an odd number or a 2 (4 ways)

Sample space: 6 (# of outcomes)

Probability:

What are the odds
that.... will happen?

How likely is an event?

of ways event can occur
sample space

of possible ways that event can
occur divided by sample space

$\frac{3}{6}, \frac{1}{2}, 0.5, 50\%$ Expressed as decimal, percent, or
fraction

What are the odds..
that I pull ~
blue-eyed monkey
out of the bag?

Example: 17 monkeys - 6 have blue
eyes, 11 have red eyes

$$\frac{6}{17}$$

Theoretical vs. Experimental probabilities

Flip a coin ...

of ways event can occur
sample space

Theoretical probabilities describe the likelihood of an event

of times an event occurred
of trials

Experimental probabilities describe how many times the event ACTUALLY occurred in a given number of trials

Heads — experimental probability

$$\frac{47 \text{ heads}}{100 \text{ tosses}} = \frac{47}{100}$$

theoretical probability

$$\frac{1 \text{ way to get heads}}{2 \text{ possible outcomes}} = \frac{1}{2}$$

How to Find Possible Outcomes:

Make a table showing all possible outcomes for each activity:

heads or tails
(sample space = 2)

← Flip a coin:

Flip TWO coins:

1 st coin
heads
heads
tails
tails

2 nd coin
heads
tails
heads
tails

} sample space = 4

Dice:

1	1
	2
	3
	4
	5
	6
2	1
	2
	3
	4
	5
	6
⋮	

} sample space = 36

What is the probability that the spinner stops on an even number?

$$\frac{4}{9} \quad \frac{5}{9}$$

What is the probability that the spinner stops on an odd number?

You spin the spinner 24 times. It stops on 27 twice. What is the experimental probability of stopping on 27?

$$\frac{2}{24} = \frac{1}{12}$$

You spin the spinner 30 times. It stops on a multiple of 3 five times. What is the experimental probability of stopping on a multiple of 3?

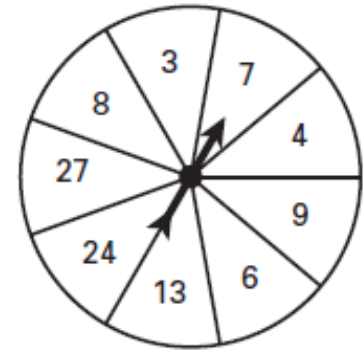
What are the ~~odds in favor~~ ^{probability} of stopping on a multiple of 4?

$$\frac{3}{9} = \frac{1}{3} \quad 3:6 \rightarrow 1:2$$

What are the odds against stopping on a multiple of 6?

the number of ways
the event could occur : the # of ways the
event could not occur

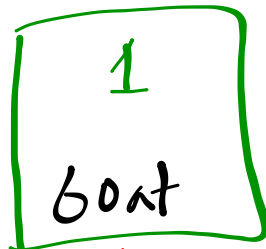
$$2:7$$



<http://www.marilynvossavant.com/articles/gameshow.html>



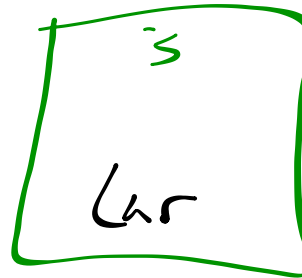
We'll come back to this one...



(your pick)



OPEN



Homework:

p. 846, 3-6 (not 5), 9-12, 17-18