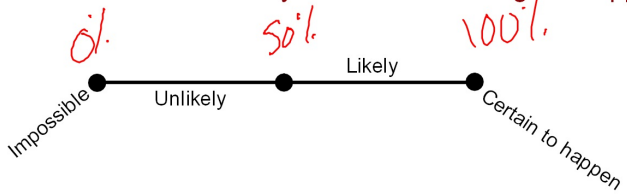
Probability:

The measure of how likely it is that something will happen



Probablity can be given as:

a ratio

a decimal

a percent

Experimental Probability

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

Theoretical Probability

Sample Space: Set of all possible outcomes

$$P(\text{event}) = \frac{\#\text{ favorable outcomes}}{\text{sample space}}$$

Experimental or Theoretical Probability?

Notes

1. In a bag there are the following colored marbles:

20 red 15 blue 30 yellow 5 green

You will pull out one marble at random.

Find each probability as a fraction.

(a) P(green) = $\frac{5}{70}$

(b) P(not yellow) = $\frac{40}{70}$

(c) P(Red or Blue) = $\frac{35}{70}$ (20 + 15)

Experimental or Theoretical Probability?

2. The numbers from 1 to 20 are written on pieces of paper and placed into a hat. You will pull one out at random. Find each probability as a percent to the nearest hundredth.

(a) P(multiple of 3) $= \frac{6}{20} = 30\%$

(b) P(factor of 16) $= \frac{5}{20} = 25\%$

(c) P(# less than 5) $= \frac{4}{20} = 20\%$

(d) P(Factor of 12 and Prime)

1 12
2 6
3 4

$= \frac{2}{20} = 10\%$

1 16
2 8
4

Experimental or Theoretical Probability?

3. Use the results of the survey of people's favorite television network. You will select a person at random. Find each probability as a fraction.

	ABC	NBC	Fox	CBS	total
male	12	8	15	5	40
female	9	14	10	7	40
total	21	22	25	12	80

(a) P(Male) $= \frac{40}{80}$ (b) P(likes CBS) $= \frac{12}{80}$

(c) P(likes NBC and is female) $= \frac{14}{80}$

(d) P(likes Fox or is a male) $= \frac{50}{80}$

Experimental or Theoretical Probability?

4. Use the spinner below. You'll spin it once. Find each probability as a fraction.

a) P(Blue or Green) $= \frac{6}{10}$

b) P(not Red) $= \frac{6}{10}$

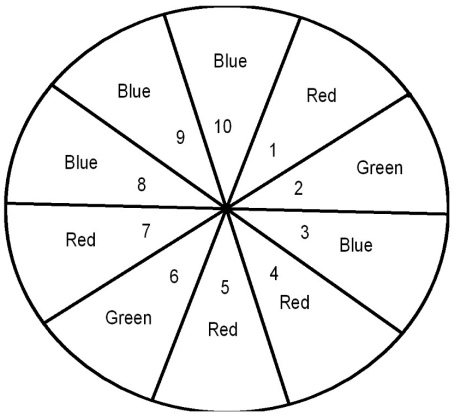
c) P(Multiple of 4) $= \frac{2}{10}$

d) P(factor of 16) $= \frac{4}{10}$

e) P(Red or Odd) $= \frac{6}{10}$

f) P(Blue and Odd) $= \frac{2}{10}$

g) P(prime or even) $= \frac{8}{10}$



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Problems 10-14, 28-33

* a number cube is a die: