A survey was taken asking people to pick their favorite kind of movie from the three listed below. They could only pick one.

	Cartoon	Action	Mystery	
Child	55	15	6	76
Adult	12	28	31	71
	67	43	37	147

1. P(Cartoon or Mystery)

$= \frac{104}{147}$

2. P(Adult or Action)

$43 + 71 - 28$

$= \frac{86}{147}$

3. P(Mystery and Action)

$= \frac{0}{147}$

4. P(Cartoon and Child)

$= \frac{55}{147}$

If your parents tell you this:

I will let you use the car under one condition....

What does it mean?

That your parents have placed a restriction on you for you to be able to use the car.

	Snickers	Reeses	KitKat	Skittles	Total
Male	18	32	28	13	91
Female	20	29	19	22	90
Total	38	61	47	35	181

What is the probability that the next person you select likes Reeses under the one condition you must select a female?

$= \frac{29}{90}$

must be a female

Conditional Probability:

Probability that has a restriction limiting the sample space. (# of total outcomes)

P(B | A): "The probability of B given the condition A must be true."

or to shorten it up a little more:

The probability of B given A.

	Snickers	Reeses	KitKat	Skittles	Total
Male	18	32	28	13	91
Female	20	29	19	22	90
Total	38	61	47	35	181

Find each conditional probability. Give answer as a fraction.

1. P(Male | Reeses) = $\frac{32}{61}$ (male Reeses)

2. P(KitKat | Female) = $\frac{19}{90}$

Find each probability as a percent rounded to the nearest tenth.

Municipal Waste Collected (millions of tons)

Material	Recycled	Not Recycled
Paper	36.7	45.1
Metal	6.3	11.9 = 18.2
Glass	2.4	10.1
Plastic	1.4	24.0
Other	21.2	70.1
	= 68	

SOURCE: U.S. Environmental Protection Agency.

1. P(Paper | Recycled)

$= \frac{36.7}{68} = 54.0\%$

2. P(Not Recycled | Metal)

$= \frac{11.9}{18.2} = 65.4\%$

Find each probability as a fraction.

	Cartoon	Action	Mystery	
Child	55	15	6	76
Adult	12	28	31	71
	67	43	37	147

1. P(Cartoon | Adult) = $\frac{12}{71}$

2. P(Child | Action) = $\frac{15}{43}$

3. P(Mystery and Adult) = $\frac{31}{147}$

4. P(Action or Cartoon) = $\frac{110}{147}$

You can now finish Hwk #24

Sec 12-2

Pages 656-658

Problems 1-8, 25-27

change to problems originally assigned

This is the end of the Probability sections
that will be covered on Friday's quiz.

We will now begin the Statistics portion.

Some Statistics Vocabulary:

Measures of Central Tendency (the 3 M's):

- Mean
- Median
- Mode

Gives and indication of where the "middle" of the data is.

Box-and-Whisker Plot:

- Quartiles
- Extremes
- Median
- Upper 25%
- Lower 25%
- Middle 50%

- Outlier
- Percentiles

Measures of Variability:

- Range
- Interquartile range
- Standard Deviation
- Z-score

Gives an indication of how spread out the data is, or how much variation there is in the data.

- Sample
- Sample Proportion
- Margin of Error

- Normal Distributions
- Standard Normal Curve
- Within x standard deviations