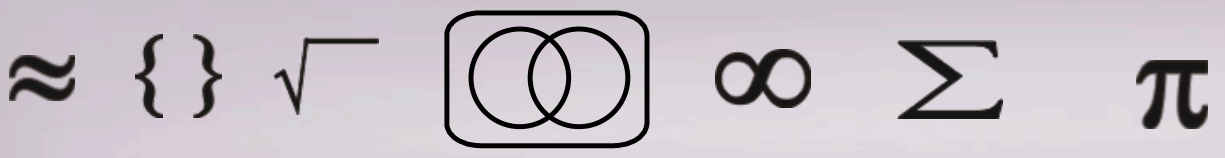

relative, absolute

random, systematic

Math 1030 #7c

Dealing With Uncertainty

Accuracy vs. Precision

significant digits

accuracy, precsion

Accuracy - how closely a measurement approximates a true value.

Precision - describes the amount of detail in a measurement.

EX 1: Suppose your true weight is 120.7 lb. The scale at the doctor's office measures your weight as 121.72 lb. The scale at the gym measures your weight as 120.4 lb.

a) Which scale is more precise?

b) Which is more accurate?

EX 2: Suppose your actual height is 5 feet and 5.2 inches. A tape measure which can be read to the nearest 1/8 of an inch gives your height as 65 3/8 inches. The laser device at the clinic that gives readings to the nearest hundredth of an inch says you are 65.31 inches.

a) Which is more precise?

b) Which is more accurate?

Rules for Combining Measured Numbers

Add/Subtract: round your answer to the same precision as the least precise number in the problem.

Multiply/Divide: round your answer to the same number of significant digits as the measurement with the fewest significant digits.

EX 3: Use the rounding rules to calculate these answers.

a) At the deli, you purchase .25 lb. of coleslaw and 1.3 lb. of turkey. What is the total weight of your purchase?

b) You traveled 30 miles in 0.85 hours, what was your average speed?