1. Use a stopwatch or any other kind of clock to measure the duration of a "beep". Share your results.
 a. List the measured time intervals in order of size, with the shortest first and the longest last.
 b. If it seems appropriate, cross out the highest and lowest or the two highest and two lowest.
 c. The list shows that the measured time interval was probably between ____ and ____ seconds.

2. When you filled in the blanks in 1d you were describing the result of a measurement in "**range**" form. If a weather forecast predicts that "three to five inches of rain will fall tomorrow night", the prediction has been made in ______ form.

3. Whenever you give the value of a quantity in range form, you give two different numbers.
 -The smaller one is called the "smallest likely value", or "SLV".
 -The greater one is the "__________ likely value", or "____".
 a. The SLV of the forecasted rainfall in #2 was given as ___ ____. (Write a number with units.)
 b. The __ LV of the forcasted rainfall was also given as ___ ____.

4. If my reaction time is *always* exactly 1.00 second, then I will always start my clock ____ sec after the beep begins and will always stop my clock _____ second after the beep ends.
 a. The difference between my recorded result and the true time interval will be ____ _____.
 b. If a person's reaction time is *always the same* then that person's beep-timing results will always be __________. (too big, too small, correct, unpredictable) -Does 4a contradict 4b? ___
 c. Suppose your reaction time is always 0.100 second, and mine is always 1.00 second: Will you and I get different results in the beep-timing experiment? ___ -Does 4c agree with 4b? ___

5. Did everybody get the same result when they timed the beep in #1? ____
* a. What does that clue tell you about our reaction times?
 Please answer with a statement on the back of this paper. It must be short, clear and simple.
 b. Does your answer to 5a contradict your answers to #4? ___ *If so, you will get credit for neither one.*

6. Find a stack of paper roughly two centimeters thick. (A physics textbook is useful here.)
 a. Measure its thickness as precisely as you can with a centimeter ruler: **Thickness = ____ cm.**
 b. Determine the number of sheets of paper in that stack: **N = _____ sheets**
 c. Divide to determine the thickness of one page: **(____ ___) ÷ (____) = ______ cm.**
 d. Convert that result to scientific notation. *Don't forget the units!* __________ ___

7. A "**micron**" is a convenient UNIT for page thickness. One micron is one millionth of a meter, or 10^{-6} meter. We also know that one meter is equal to ____ centimeters. (Please use scientific notation.)
 a. Using S.N. again, one meter = ____ microns. One cm. = ___ microns. 10^2 cm. = ___ microns.
 b. To convert from centimeters to microns in scientific notation you add ___ to the exponent.

8. The page thickness in 6d was ______ ____. (number with units) The *exponent* in that number was ___. According to 7b, we can convert the page thickness to microns by adding ___ to that exponent. Please round off the result to the nearest *whole number*. **Page thickness = _______ microns**

9. Make a little box on the number line below to indicate your page thickness. Then share your result with the class and make boxes for everyone else's results. If two or more people get the same result, then stack the boxes. A set of repeated measurements displayed in this fashion is called a "histogram".

56 58 60 62 64 66 68 70 72 74 76 78 80 82 84 86 88 90

 a. Express the page thickness in "range" form, *with units*, as you did in 1d. (Use 1c, use the histogram.)
 "Page thickness is probably between ____ and _____ _______s."
 b. Pretend that the boxes represent weights on a stick. There is a certain spot where you can support the stick so that it balances. Indicate the location of that spot on the number line.
 c. The balancing point is the same as the *average* of the measured values. We shall also call it the "MLV", or "most likely value" of the _________ _________. *Copy the NAME of the measured quantity from #8 or #9.*