**My Notes for Week 04:(Tuesday)**

1) Move people into their GROUPS (have group list available)

2) Quiz

3) During quiz, hand back lab

**Lab comments:**

- make sure name is “lab3.m” AS INSTRUCTED

- some people use “find” and it worked, this time...but as we will talk about today it is not necessarily gauaranteed.

- make sure you program RUNS, expecially after you add partner info.

- always a good idea to “clear” the workspace and run.

**Computer math:**

On Laptop:

.1 <ret>

.1+.1<ret>

.1+.1-.2 <ret>

.1+.1+.1-.3 <ret> - 5.5511e-17!

- Computer math works on computer numbers

- Computer numbers: each number has to fit into a finite nuimber of bits:

e.g. for unsigned integers: \_ \_ \_ \_ \_ \_ \_ \_ each has 0 or 1, so we have 2\*2\*...=2^8 = 256 possible numbers.

x=uint8(34); y=uint8(50)

x+y OK

x-y <- 0!

x=uint8(240)

x+y <- 255.

>> help datatypes

Notice all the kinds of different integers – uint and int (with a sign)...also logical....also “single” and “double”.

Double precision floating point:

Numbers re represented more or less as +/-(1+f) x2^e (sign, mantissa, 0<=f<1, exponent) so there are

still a finite number of patterns (numbers), spread unevenly throughout the real number line

LARGEST NUMBER realmax

realmax\*2 -> Inf

SMALLEST realmin (Note, not for class – realmin/2 is not zero, there are so-called 'denormalized numbers represented as (f)x2^e the handle underflows.

So...long decimal numbers are represented by the NEAREST number. But this means

sqrt(2)\*sqrt(2)-2 ~= 0!!!

and .1+.1+.1 ~= .3!

Other stuff: what is the smallest number you can add to 1 to get >1? eps

Special numbers: 1/0 -> Inf

What is 0/0? -> NaN! “Not-a-Number”.

WorkSheet

After doing part 1, perhaps do

>>help precendence

**Thursday class**

Comments on lab

1) Talk about how lines are processed IN ORDER from first to last (and not backwards). Give example

2) Emphasize the importance of understanding the separation INPUTS/DEFINITIONS/CALCULATIONS/OUTPUT

3) Discuss some of MATLAB's syntax help features:

- the orange bars at left

- the workspace viewer (wiuth variables and their values)

- the debugger to step through code (show what happens when it is accidentally invoked – the appearance of the red DEBUG STOP button, K>> in the command line, the dits on the left side of editor window

4) Emphasize how it is useful to see the plot window AT THE SAME TIME as the other windows.