Quiz #1 Answers

1. Write a function in your favorite imperative language that will take a collection of numbers (could be an array , vector, etc.) and return to you the largest element.

You have lots of options here, but here is some possible C code.

```
double max(double a[],int len) {
        int i;
        double ret=a[0];
        for(i=1; i<len; ++i) {
                if(a[i]>ret) ret=a[i];
        }
        return ret;
}
```

2. How are non-whole numbers represented on computers and why does that matter to you?

Numbers that aren't integers are represented on modern computers using the IEEE floating point standard. There are standards for single precision, double precision, and quadruple precision. What matters most to us is that these have finite precision. They aren't "perfect" or "real" numbers. What that means is that some values can't be represented exactly and this will introduce small errors into our calculations. Because of this certain math identities we are used to won't always hold and checking for equality between calculated values is inherently risky. You should also avoid doing things like subtracting values that are very close to equal or dividing by small numbers.

Extra Credit: What are three ways you can create an array of numbers in Matlab?

[1 2 3]
linspace(1,3,3)
1:3