MA111 — Worksheet 1.2
Numbers and Quantities

1. An article in the *Kentucky Kernel*, July 10, 2008, had the title "Solar car to journey 2,400 miles without stopping for gas", and then began, "With gas at $4 a gallon, it would cost about $9600 to travel from Dallas, Texas to Calgary, Alberta, Canada." Comment on this. The online version of the article can be found at

   http://kykernel.com/2008/07/10/solar-car-to-journey-2400-miles-without-stopping-for-gas

2. One way to grasp numbers relating to the the world's population is to imagine that the population is rescaled down to a "village" of 1000 individuals, with corresponding subgroups of people scaled accordingly. Use the website

   http://www.thearda.com/QuickLists/QuickList_125.asp

   to determine how many of these 1000 people would be adherents of each of the various religions listed.

3. Brainstorm to create a list of potentially very large or very small quantities. Some examples: the size of a hydrogen atom; the number of neural connections in the human brain. Now take a look at Order of Magnitude,

   http://en.wikipedia.org/wiki/Orders_of_magnitude

   Is this a credible website? If you want a more credible source, where would you go?

4. Watch the videos "Powers of Ten",

   http://www.youtube.com/watch?v=A2cmlhfdxuY

   and "Secret Worlds: The Universe Within",

   http://micro.magnet.fsu.edu/primer/java/scienceopticsu/powersof10

   In what ways did these assist you personally to grasp certain orders of size?