**Round 1: Scientific Notation**

1. Write the following numbers in scientific notation:
   1. Twenty-three thousand
   2. 70 trillion
   3. 15
   4. 0.00348
2. 2.9 x 1011 + 3.7 x 1013
3. 2 x 103 • 4 x 105
4. 5.0 x 10-4 / 2.5 x 10-6
5. Five hundred billion times thirty-five thousand

**Round 2: Percentages**

1. Thirteen percent of a 12,000-acre forest is being logged. How many acres will be logged?
2. If 35% of a natural area is to be developed, leaving 520 acres untouched, how many acres are to be developed?
3. If the concentration of mercury in a water supply changes from 65 ppm to 39 ppm in a ten-year period, what is the percentage change of the mercury concentration?
4. In 2000, the level of ammonia in a river was 50 ppm. In 2004, the level was 84 ppm. What is the percentage increase since 2000?
5. The average cost of electricity in Connecticut currently 10.1 cents/kWh. This summer prices are expected to decrease by 25%. What will be the new cost per kWh for electricity this fall?

**Round 3: Metric Units**

1. Convert 14,000 mm to meters.
2. Convert 4.66 megabytes to kilobytes.
3. Convert 7500 megawatts to watts.
4. Convert 0.09 mm3 to cm3.
5. Convert 225 cm2 to km2.

**Round 4: Unit Conversions**

1 barrel = 150 L 1 metric ton = 1000 kg

1. Fifty eight thousand kilograms of solid waste is equivalent to how many metric tons of garbage?
2. If a tectonic plate moves 25 km in a million years, what is its rate of movement in cm/year?
3. The BP oil spill in the Gulf of Mexico lasted for 90 days. It is estimated that the spill released 50,000 barrels of oil/day. How many gallons was spilled into the Gulf in total during this time?
4. Your community is installing a windmill to supplement its energy needs. It is rated to produce 6 MW. How many homes can this supply energy if 1 home uses 1200 W?
5. Most energy used in the US is produced from coal. It is estimated that one person is responsible for the burning of 1 ton of coal per year to meet their energy needs. For every 100 lbs of coal burned, 2.5 lbs of sulfur go into the atmosphere. How much sulfur is put into the air by coal burning each year for the entire US, which has an approximate population of 300,000,000?