

A.P.E.S. Summer Review of Basic Mathematical Skills- Practice Problems

Answer the questions. Show all work and submit via Google docs. If you choose to handwrite, submit a picture of your completed work.

- 1) What is ten thousand times one hundred million? Show your work in scientific notation. Give the answer in scientific notation and in words.
- 2) A population of deer had 325 individuals. If the population grows by 16% in one year, how many deer will there be the next year?
- 3) One year I had 124 AP Environmental Science students and the next year I had 87 Environmental Science students. What percentage did the population of APES students decrease by (round to the nearest tenth)?
- 4) Electricity costs 7 cents per kilowatt hour. In one month one home uses 1.8 megawatt hours of electricity. How much will the electric bill be? (be sure to look at the prefixes chart on the previous page for the conversion of kilo to mega)
- 5) Your car gets 21 miles to the gallon and your friend's car gets 28 miles to the gallon. You decide to go on a road trip to the University of Virginia, which is 175 miles away. If gas costs \$4 per gallon and you decide to split the gas money, how much money will each of you save in gas by driving your friend's car?
- 6) Virginia Beach is about 20 miles wide and 28 miles long. If one inch of rain falls on Virginia Beach, how many cubic feet of rain fell on Virginia Beach? (Hint: convert all units to feet first).
- 7) The concentration of mercury in a water supply changes from 10ppm (parts per million) to 56ppm over a ten-year period. What is the percentage change of the mercury concentration?
- 8) Consider a wind turbine that is rated at 1.5 MW (megawatts) per hour. This means that with sufficiently high winds, it will produce 1.5 MW or 1,500 kW (kilowatts) of power. If this wind turbine runs at its rated power of 100% of the time for a full year, how much energy would it produce in a year? Give your answer in kWh/year (kilowatt hours per year). (3pts)