

Unit Conversions Problems

Show all work (use a separate sheet of paper if necessary). Put answers in scientific notation indicating the correct number of significant figures.

- 1) How many nickels are in a \$2 roll?
- 2) A coin collector has 2,150 dimes. What is the dollar value?
- 3) What is the number of pencils in 0.750 gross? (A gross of pencils is 12 dozen; that is, 144.)
- 4) How many reams of paper can be packaged if 12,500 sheets are available? (A ream of paper is 500 sheets.)
- 5) How many karats is a diamond weighing 0.305 gram? (One karat is 0.200 gram.)
- 6) How many liters of gasoline are required to fill a 20.0-gallon tank? (One gallon is 3.78 liters.)
- 7) How many miles does light travel in an hour? (The velocity of light is 186,000 miles per second.)
- 8) The oldest rock found on earth was discovered in South Africa. The rock is estimated to be 4.0 billion years old using uranium-238 age dating. Express the age of the rock in hours using scientific notation.
- 9) The Apollo 15 brought back a lunar sample dubbed the Genesis Rock. The rock is estimated to be 4.1 billion years old using uranium-238 age dating. Express the age of the rock in minutes using scientific notation.
- 10) A troy ounce equals 31.1 grams; one troy pound equals 12 troy ounces. What is the mass in grams of a pound of gold? (Note: The mass of gold is measured in the troy system.)
- 11) An avoirdupois ounce equals 28.4 grams; What is the mass in grams of one avoirdupois pound of feathers? (Note: The mass of the feathers is measured in the avoirdupois system.)
- 12) Sherrina can run 2.000×10^2 meters in 25.65 seconds. What is her speed in miles per week?
- 13) A Hummer H3 can travel an estimated 570 miles on its 51.5 gallon tank. If gas costs \$2.95 per gallon, how far can you drive a Hummer H3 on \$5.00?
- 14) Round off the velocity of a Firebolt, 9.95×10^1 m/s, to two significant digits.
- 15) Round off the velocity of light, 2.997925×10^{10} cm/s, to three significant digits.