# Example Questions for Quiz 1

**Here are some questions that are similar to what will be on Quiz 1. I can guarantee that questions modeled after the graph question and the earth density question will be on the quiz. Ones similar to some of the lower-point questions will be used to make the points total to 20 points. Partial credit will be given.**

1. (2 points) What is the volume of a block of wood that is 5 cm x 10 cm x 20 cm?

2. (2 points) You are given a cube with 5-cm long sides that has a mass of 1418 g. Assume the cube is uniform and made of one material. Calculate its density **and** use the table of densities in your Equation Sheet to determine the material.

$\rho =$ Material =

3. (2 points) What is the mass of a 120 $cm^3$ chunk of depleted uranium (density=19.1 $g/cm^3$)?

4. (2 points) There are two cubes of gold, but one has sides that are 3 times as large as the other. The smaller is worth $37. What would the larger one cost if it is valued at the same price per gram?

5. (2 points) Draw lines that connect the following quantities with the matching formula:

| | |
|---|---|
| *a* is directly proportional to *b* | $a \propto b^2$ |
| *a* is inversely proportional to *b* | $a \propto 1/b$ |
| *a* is directly proportional to the square of *b* | $a \propto 1/b^2$ |
| *a* is inversely square proportional to the square of *b* | $a \propto b$ |

6. (2 points) Evaluate the following expression:

$$\frac{\frac{1}{5}\cdot\frac{3}{4}}{\frac{2}{3}} =$$

7. (2 points) Given the equation $V = I \cdot R$ , write an expression for *I* in terms of *V* and *R*, and also write an expression for *R* in terms of *V* and *I*:

$I =$ $R =$

8. (5 points) Calculate the average density of the earth using the following formula with the earth mass being $m = 5.97 \times 10^{24}\,\text{kg}$ and the earth mean radius being $r = 6.38 \times 10^{6}\,\text{m}$ :

$$\rho = \frac{m}{V} = \frac{m}{\frac{4}{3}\pi r^3} =$$

9. (2 points) What is the SI unit for mass?

10. (2 points) What is the SI unit for time?

11. (2 points) What is the SI unit for distance?

12. (4 points) Fill in the appropriate exponents in the following:

$1\,\mu\text{m} = 10^{\quad}\ \text{m}$ $1\,\text{km} = 10^{\quad}\ \text{m}$ $1\,\text{mm} = 10^{\quad}\ \text{m}$ $1\,\text{nm} = 10^{\quad}\ \text{m}$

13. (4 points) Convert the density of lead of 11.34 g/cm$^3$ to SI units of kg/m$^3$.

14. (5 points) Using the coordinate system below, plot the points (-1,5), (2,2), (3,1) and see that they form a straight line. Draw suitable axes with scale numbers. Also, determine the slope *m* and y-intercept *b* of that line.

Slope: m =

y-Intercept: b =