Preparing for Quiz 1 on Chapter 1 + Appendix A

Equation: $\rho = \frac{m}{V}$ will be provided.

You are expected to know the equations for the area of a circle πr^2, the circumference of a circle $2\pi r$, the area of a rectangle $l \cdot w$, the volume of a cuboid $l \cdot w \cdot h$, and the volume of a sphere $\frac{4}{3}\pi r^3$. I will not provide those equations.

You are expected to know about the unit prefixes (See Table 1.2, page 6 of text.):
f (10^{-15}), p (10^{-12}), n (10^{-9}), μ (10^{-6}), m (10^{-3}), c (10^{-2}), k (10^{+3}), M (10^{+6}), G (10^{+9}), and T (10^{+12}).

You are expected to know how to use scientific notation on your calculator.

You are expected to know how to solve simple algebraic equations to get one variable in terms of the others.

Most important Key Terms for Chapter 1:

area	liter	standard unit
density	meter	theory
direct proportion	proportionality constant	unit
inverse proportion	ratio (scale, scale factor)	variable
kilogram	second	volume

Example 1.1:
Two blocks are on a table. Block A has a volume of 30.0 cm^3 and a mass of 81.0 g. Block B has a volume of 50.0 cm^3 and a mass of 135 g. Which block has the greater density? If the two blocks have the same density, what material are they? (See Table 1.3)

Table 1.3:

Styrofoam	0.045	g/cm^3	Aluminum	2.70	g/cm^3
Balsa Wood	0.160	g/cm^3	Diamond	3.53	g/cm^3
Gasoline	0.680	g/cm^3	Iron	7.87	g/cm^3
Oilve Oil	0.911	g/cm^3	Copper	8.96	g/cm^3
Water	1.00	g/cm^3	Lead	11.34	g/cm^3
Seawater	1.03	g/cm^3	Mercury	13.6	g/cm^3
Iron Wood	1.21	g/cm^3	Uranium	19.1	g/cm^3
Pyrex Glass	2.23	g/cm^3	Gold	19.31	g/cm^3

Example 1.2:
A rock with a volume of 4.50 cm^3 has a mass of 15.0 g. What is the density of the rock? (Answer: 3.33 g/cm^3)

Proportionality and inverse proportionality:
Know which pairs are equivalent among the following 8 expressions for proportionality:
Direct, Inverse, Square, Inverse Square, $a \propto b^2$, $a \propto 1/b$, $a \propto 1/b^2$, $a \propto b$

Study and understand Box Figure 1.1 on page 11 which shows how energy gets spread out as it radiates from a point source.

How to Solve Problems (page 11)
Carefully study the discussion under the subtitle "How to Solve Problems." There are two examples in that section, one about a fuel pump, and a second one calculating the mass of 10 cm^3 of mercury.

Understand Figure 1.13 (page 12)

Appendix A – All of these are very important except for A.3.
A.1 Ways to represent 1 and working with fractions
A.2 Solving equations

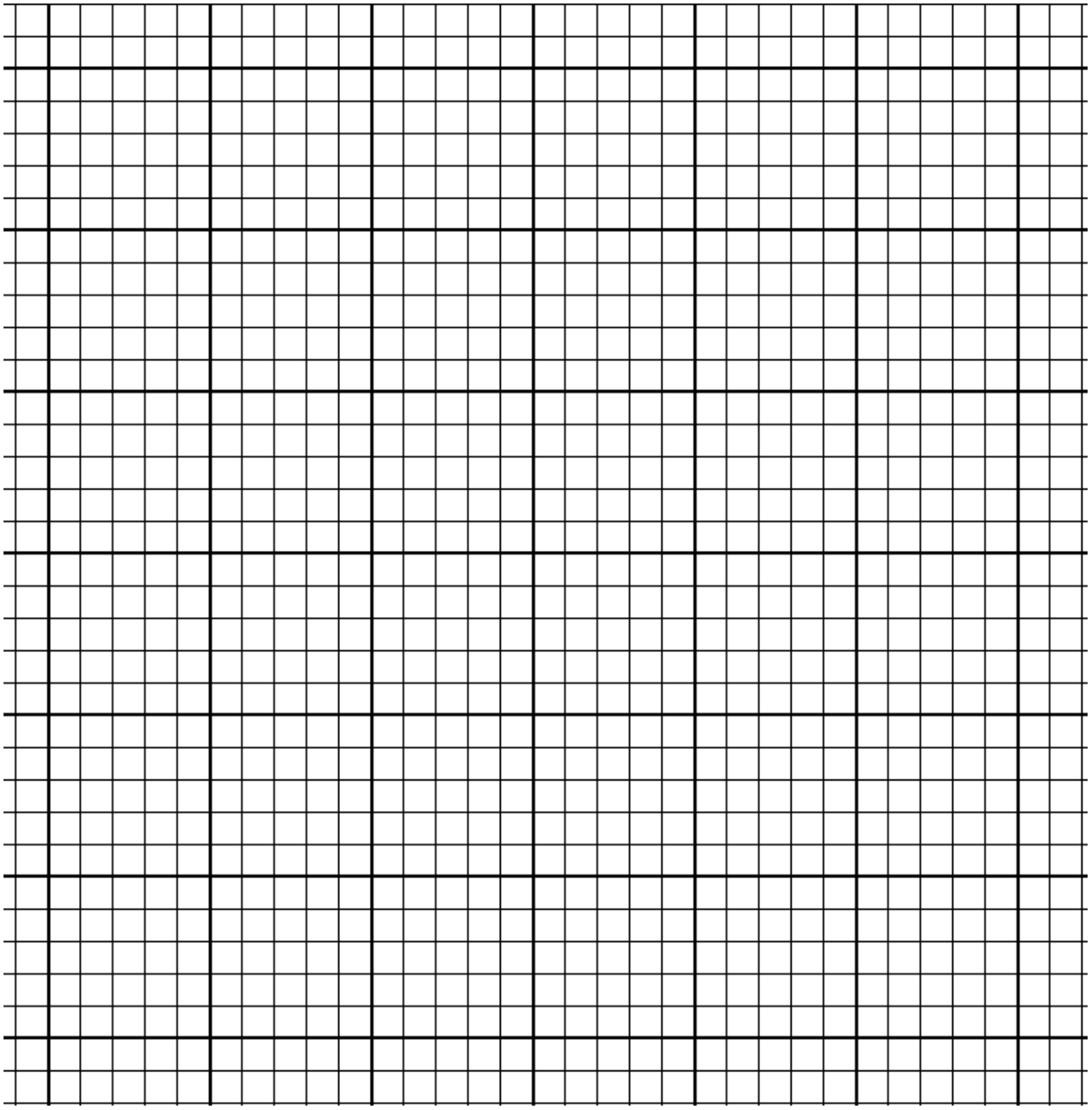
Ignore A.3 Significant Figures.
Unless you are told otherwise, 3 significant figures are adequate.
A.4 Conversion of Units
A.5 Scientific Notation
A.6 The Simple Line Graph

You can use the graph grid below to practice setting up a coordinate system and graphing. For example, you might graph the following set of points:

(-1.50, 4.25), (-1.00, 2.00), (0.00, -1.00), (0.50, -1.75), (1.00, -2.00),

(1.50, -1.75), (2.00, -1.00), (3.00, 2.00), (3.5.0, 4.25)

Choose your (0,0) point so that all points can fit on the graph.
Label your x-axis and y-axis with +x to the right and +y upward.



Here is graph with the points plotted and a curve sketched through those points.