I know we have not gone over these things specifically, but some of it is in the summer packet of information, some you can find on the internet. Part 2 #1 you need to use SOHCAHTOA (remember that?).

1. The fundamental SI units for mass, length and time respectively are:

a) Newton, meter, minute b) kilogram, meter, second

c) pound, foot, hour d) kilogram, centimeter, hour

e) gram, meter, second

2. The speed of a boat is often given in knots. If a speed of 5 knots were expressed in the SI system of units, the units would be:

a) m b) s c) m/s d) kg/s e) s/m

3. The mass of the sun is 2.0 x 1030 kg, and the mass of the hydrogen atom is 1.67 x 10-27 kg. If we assume the sun is mostly composed of hydrogen, how many atoms are there in the sun? (Hint: Use unit analysis!)

a) 1.2 x 1056 atoms b) 3.4 x 1056 atoms

c) 1.2 x 1057 atoms d) 2.4 x 1057 atoms

4. A physics class in a large lecture hall has 150 students. The total mass of the students is about \_\_\_\_\_ kg (Hint: Based on the answer choices, only a very rough estimate is needed).

a) 102 b) 103 c) 104 d) 105

5. An object is 78 grams and moves 34 cm. Change both of these into correct SI units.

a) .78 kg, .034 m b) .078 kg, .034 m c) .078 kg, .34 m d) .78 kg, .34 m

6. A circle has an area of 2.0 m2. A second circle has double the radius of the first. The area of the second circle is \_\_\_\_\_\_\_\_ times that of the first. (Hint: Use the formula for the area of a circle and see what happens if you double the radius)

a) 0.50 b) 2.0 c) 4.0 d) 8.0

Part II Free Response

1. A ball on the end of a string of length L = 0.50 cm is hung from a hook in the ceiling. The ball is pulled back to an angle of 30° from the vertical. What is the height h above the lowest point of the ball? (Hint: You need to make a right triangle and then use SOHCAHTOA) (You will need to be able to do this for MANY problems this semester!!)

L = 0.50 m

L = 0.50 m



30°

h = ?

2. The following data were determined for an object dropped from rest near the surface of the moon. Make a graph of distance vs time. Then linearize and write an equation that describes the relationship between the distance fallen by the object and the time required to fall that distance.



