PHYSICS 1050: ASSIGNMENT #1

DUE: Tuesday January 12, 2016

READING ASSIGNMENT

read *Appendix B* of Franklin et al.

HAND-IN ASSIGNMENT

> include name or PIN;

> staple your assignment;

> show all your work;

> all answers are to have three significant figures unless stated otherwise.

QUESTIONS

#1

Simplify $\frac{x^4}{x^2}$.

#2

Write the following numbers in scientific notation:

(a) $2,763,100$

(b) 0.003902

(c) $4,329.76$

#3

Express the number 0.067×10^4 in ordinary notation.

#4

Evaluate $\frac{(8.25\times10^4)(3.14)(5.2\times10^3)^2}{(6.25\times10^{-3})}$.

#5

Solve the quadratic equation: $3x^2 + 2x - 5 = 0$.

#6

Solve the system of equations: $3x - 7y = 2$ and $3x - 2y = 4$.

#7

Evaluate the following equations. Write their answers in scientific notation with the correct number of significant figures. How many significant figures should the final result have?

(a) $\frac{(3.2)(8.67)}{(3.008)}$

(b) $17.2 + 2.35 + 4.3333$

(c) $3.28 \times 10^5 + 4.25 \times 10^7$

#8

Drawing by hand, create the following graphs for the equation $x = 2t^2$:

(a) x vs t graph

(b) $\ln(x)$ vs t graph

(c) $\log(x)$ vs $\log(t)$ graph

#9

At what angle or angles between 0° and 360° is $\sin\theta$ equal to 0, +1, −1? Give the corresponding angles for the cosine and tangent.

#10

A cube has a side with a length of 2.00 cm.

(a) What is the area of one-side of the cube?

(b) What is the total surface area of the cube?

(c) What is the volume of the cube?

#11

A sphere has a radius of 3.00 cm.

(a) What is the surface area of the sphere?

(b) What is the volume of the sphere?

#12

A soup can is a cylinder with a height of 10.0 cm and a diameter of 5.00 cm.

(a) What is the area of the top of the soup can?

(b) What is the area of the round part of the soup can?

(c) What is the total surface area of the soup can?

(d) What is the volume of the soup can?

#13

Evaluate: $\ln(e^3)$, $\ln(10^2)$, $\ln(4)$, $\ln(0.75)$, $\ln(1)$, $\log(e^3)$, $\log(10^2)$, $\log(4)$, $\log(0.75)$, and $\log(1)$.

#14

Solve for x: $\ln(x) = 1$, $\log(x) = 1$, $\ln(x) = -1$, $\log(x) = -1$, $\ln(x) = 2.25$, $\log(x) = 2.5$

#15

Simplify the expression: $3\ln(x) - 2\ln(y)$