PHYSICS 1030
Homework Guidelines
Fall 2020

Due to the current COVID-19 pandemic, you will submit your homework solutions online in Blackboard. You may submit your solutions as a plain text file, as a Microsoft Word document, or as a PDF file. Please submit only *one file* for your solutions, and please NO JPEG images or photographs. You may make substitutions for usual mathematical notation as necessary, as long as it's clear. The table below shows some recommendations.

Notation	Instead of...	You may use...
Multiplicaton	xy	`x*y` or `(x)(y)`
Division	$\frac{x}{y}$	`x/y`
Square root	$\sqrt{x}$	`sqrt(x)`
Exponent	x^2	`x^2`
Subscript	x_0	`x_0`
Plus or minus	$\pm$	`+-`
Integral	$\int y\,dx$	`int(y dx)`
Greek letters	$2\alpha + \beta$	`2*alpha + beta`
Inverse trig	$\sin^{-1} y$	`arcsin(y)`

Ideally we would use correct mathematical notation and hand in the assignments on paper, but for this semester we're going to have to adapt to the unusual times. If you're a skilled computer user you might try using Word's Equation Editor or even LaTeX (which is what I use for this course), but I'm not expecting you to do that.

Be sure to show your work, and use complete sentences to describe your solution. You should usually give a numerical solution to 3 or 4 significant digits.

Example. If a ball is dropped from rest from a height of 64 feet, how long does it take to reach the ground?

Solution.

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Let the x axis be pointed downward, with the origin at the
release point.  The position x as a function of time t is

x(t) = (1/2) g t^2 + v_0 t + x_0
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Since the ball is released from rest, $v_0 = 0$, and by definition of the origin, $x_0 = 0$. Therefore

$$x(t) = (1/2)\, g\, t^2$$

Solving for time t,

$$t = \sqrt{2x/g} = \sqrt{2(64\ \text{ft})/(32\ \text{ft/s}^2)} = 2.00\ \text{sec}$$