

PHYSICS 1030

Homework #0

(Due August 31, 11:59 pm)

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. See <http://www.pgccphy.net/1030/homework.html> for guidelines.

1. PayPal charges its sellers a fee of 2.9% of the sales price, plus 30¢. One vendor is selling a t-shirt for \$19.95. How much money should you send to make sure the seller has \$19.95 left over *after* paying PayPal fees? (Round your result to the nearest penny.)

2. If it takes four men four hours to build a wall, then how long would it take six men to build the same wall?

3. If $3^x = 17.25$, then what is x ?

4. Find the perpendicular distance between the line $6x - y = -3$ and the point $(6, 2)$.

5. Evaluate the integral

$$\int_0^8 (4x^3 + 7x + 2) dx$$

6. Evaluate the integral

$$\int \sqrt{x} \ln x dx$$