PHYSICS 1030
Homework #0

Due August 28, 2023, 6:00 pm

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: $3 \sin^2\left(\frac{\pi}{5}\right) \cos^2\left(\frac{\pi}{5}\right)$