

Phys331/Homework #1

Due on Wednesday 24/3/2021

1) Write

$$\int_V \vec{\nabla}\psi \cdot (\vec{\nabla} \times \vec{v}) d\tau$$

as a surface integral

2) If $\rho(\vec{r}) = \frac{c}{r^2} \delta(1 - \cos^2 \theta)$. What is the shape represented by ρ and its total charge?

*Please also solve the following problems from the textbook: 17/18, 20/20, 33/33, 34/36 and 40/42. Handing in these textbook problems is not required.