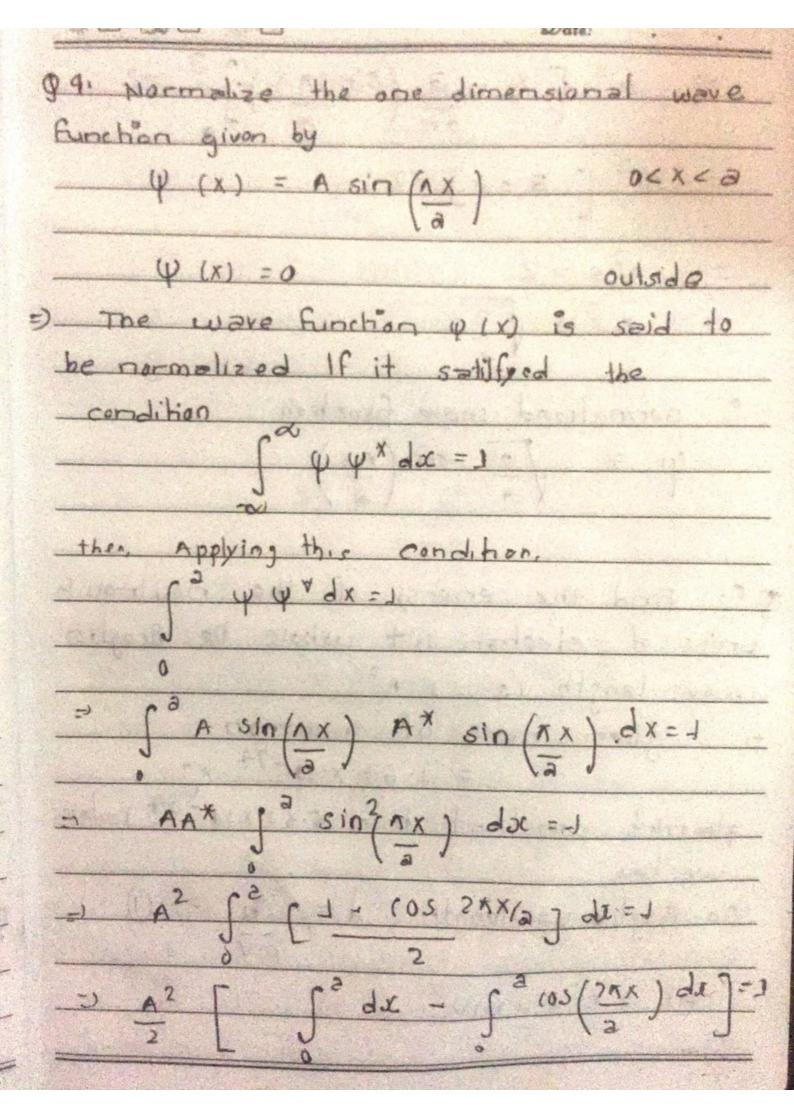
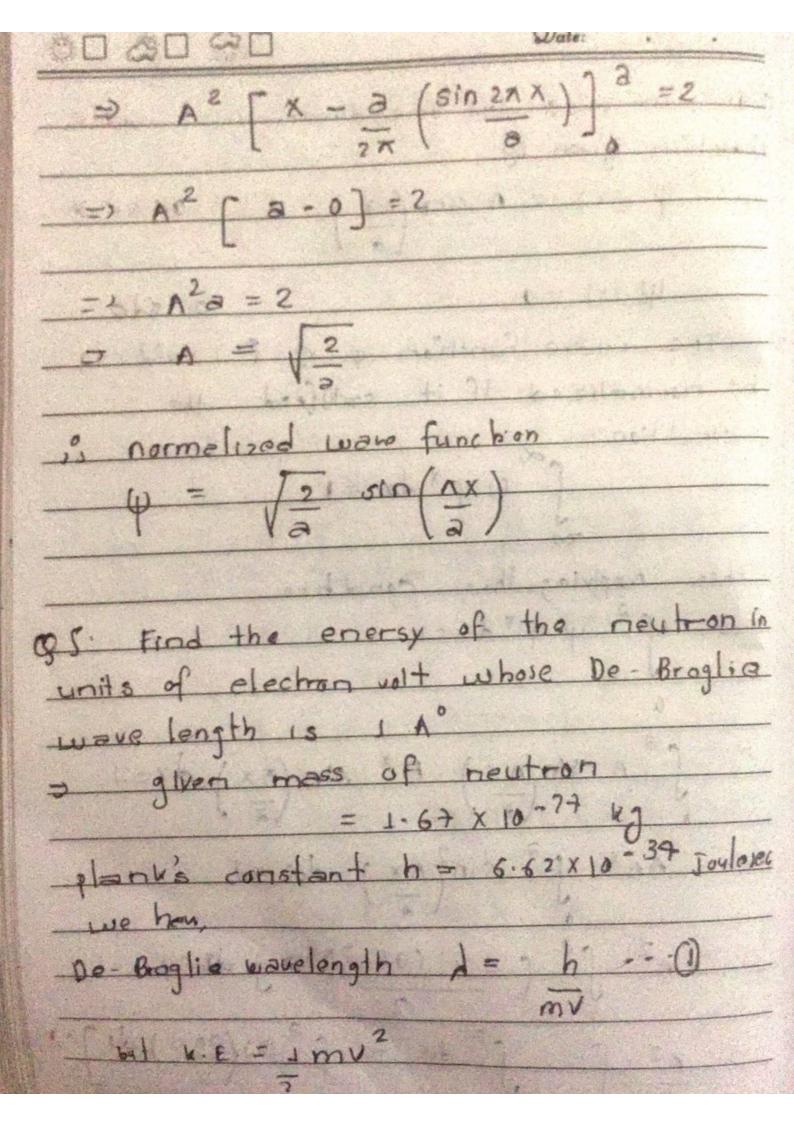


Date: Now, $\frac{\partial \psi}{\partial x} = \int_{-L}^{2} \left(\frac{n\pi}{L}\right) \cos n dx$ = -ih 2 nx f sin nxx (os nxx dx The expectation value <Px> of the momenhim of particle is o g3. The wave function of electron moving on x - aris like a wave is given by (1) = 251m 25x. calculate the probability of forming out an

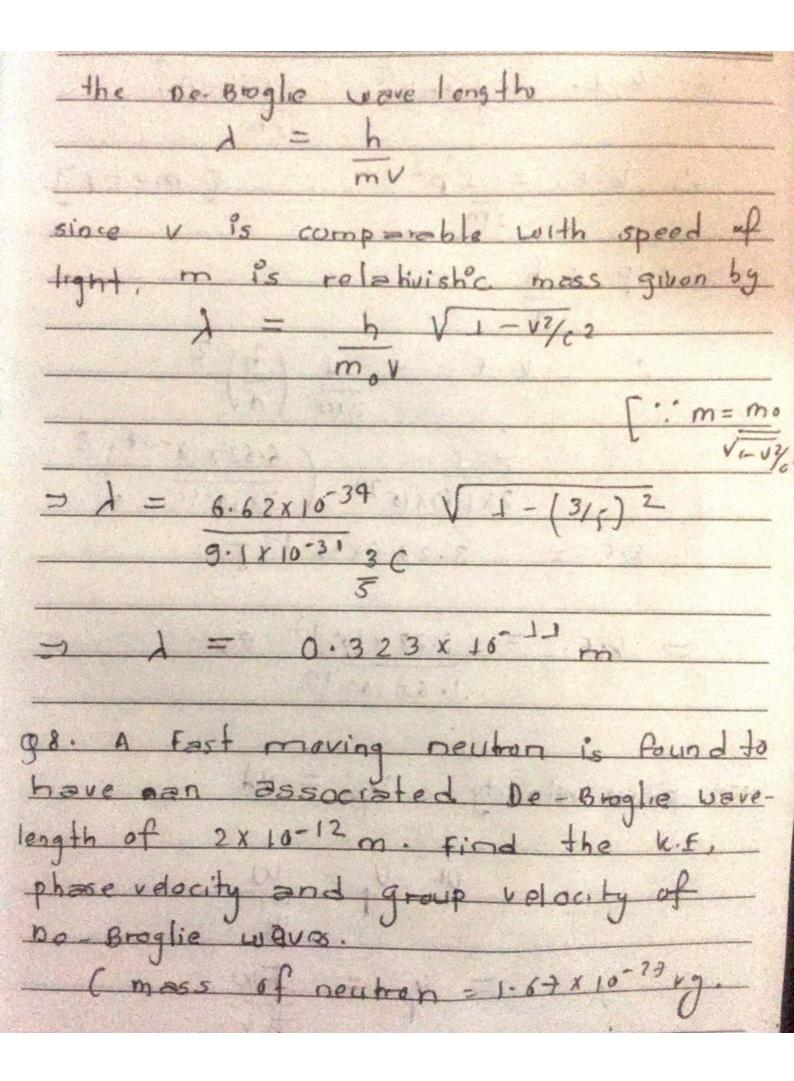
Wate: . electrone from 0:25 m on the axis. probability of finding the 4 (0.5 sin2 21x du 4 50.5 [1 - COS 2.70x] dx x - sinanx 70.5 [0.5 - sin 2 x - 0.75 + sin x 2 0.25 -0-0]

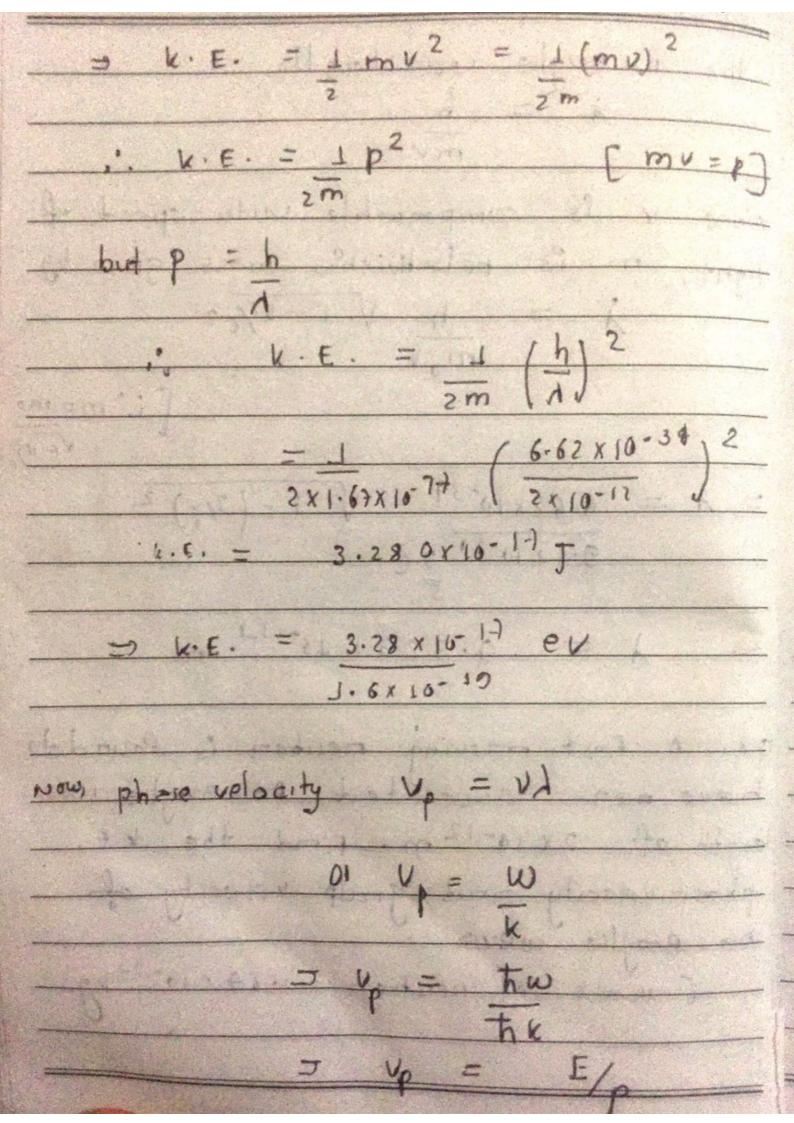




= Jmv2 $F = \perp m^2 v^2$ $m^2v^2 = 2mE$ Vame From 1 and Q - 16.62 × 16 - 34)2 2 x 1. 67 x 10 - 13 x (10-10) 2 = 13.07 × 10-57 6 N 1.6x15-19 g 6. what would be the wavelongth of quantum of radiont energy emitted, If an electron transmitted into readiotion and converted into one quenta.

sal According to plank, the enersy associated with the one quanta = h2 somen the energy of an electron is transmitted into radiation that E = he² r_{s} hu = rnc^{2} - 2 hc = mc2 $\frac{1}{m}c$ = 6.67×10-34 9-1×10-31 x 3×103 = 0.079 x 10-10 m 9.7 calculate the De-Broglie wavelength of an electron moving with velocity 3 c. - velocity of electron $v = \frac{3}{5}c$





 $v_p = p^2$ $\begin{bmatrix} E = \frac{p^2}{2m} \end{bmatrix}$ = 6.62 x 10-34 2x1.67x10-27x2x10-12 Up = 0.988×105 m/s group relocity ig = V. (positile is) $\frac{V = h}{m\lambda} \left[\frac{1 - \lambda + h}{m\lambda} \right]$ V = 6.62x10-34 1.67 x 10-77 x 2x 15-12 = 1.976x101 m/s 1. 1.976×10 m/s