

## Problems:

6- Consider a particle on a ring in the superposition state

$$\Psi(\phi) = \frac{1}{\sqrt{7}}(\psi_0(\phi) + 2\psi_1(\phi) + \psi_{-1}(\phi) + \psi_2(\phi))$$

What the probability of measuring the energy value  $E_1 = \frac{\hbar^2}{2I}$ ?

7- suppose the initial wave function for a particle moving in a ring as a superposition state as

$$\Psi(\phi, t) = \sqrt{\frac{1}{3}}\psi_3(\phi) + i\sqrt{\frac{2}{3}}\psi_{-1}(\phi)$$

a-Write the time-evolved wave function.

b-Calculate the probability density.