$$\left(\frac{\partial^2\psi}{\partial t^2}-\frac{\partial^2\psi}{\partial x^2}-\frac{\partial^2\psi}{\partial y^2}-\frac{\partial^2\psi}{\partial z^2}\right)\psi^* + m\psi\psi^* = 0$$

$$\left(\frac{\partial^2\psi^*}{\partial t^2}-\frac{\partial^2\psi^*}{\partial x^2}-\frac{\partial^2\psi^*}{\partial y^2}-\frac{\partial^2\psi^*}{\partial z^2}\right)\psi + m\psi\psi^* = 0$$

focus on time derivaties:

$$= \underbrace{\psi^*\frac{\partial^2\psi}{\partial t^2}-\psi\frac{\partial^2\psi^*}{\partial t^2}+\underbrace{\frac{\partial\psi^*}{\partial t}\frac{\partial\psi}{\partial t}-\frac{\partial\psi^*}{\partial t}\frac{\partial\psi}{\partial t}}_{\text{add and subtract to complete derivative}}}$$

$$= \frac{\partial}{\partial t}\left(\psi^*\frac{\partial\psi}{\partial t}-\frac{\partial\psi^*}{\partial t}\psi\right)$$

similar game for spatial derivaties

$$-\left(\nabla^2\psi\,\psi^* - \nabla^2\psi^*\,\psi + \vec\nabla\psi^*\vec\nabla\psi - \vec\nabla\psi^*\vec\nabla\psi\right)$$

$$= -\vec\nabla\left(\psi^*\vec\nabla\psi - (\vec\nabla\psi^*)\psi\right)$$

$\therefore$ putting all together

$$\frac{\partial}{\partial t}\left(\psi^* \frac{\partial}{\partial t}\psi - \frac{\partial \psi^*}{\partial t}\psi\right)$$

$$- \vec{\nabla}\left(\psi^* \vec{\nabla}\psi - \vec{\nabla}\psi^* \psi\right) = 0$$

So multiply LHS / RHS by i

and $\frac{\partial}{\partial t}\rho + \vec{\nabla}\vec{j} = 0$ as required