Example

An electron in an infinite square well of width L = 0.5 nm is (at t=0) described by the following wave function:

$$\Psi(x,t=0) = A\sqrt{\frac{2}{L}}\left(\sin\left(\frac{\pi}{L}x\right) + \sin\left(\frac{2\pi}{L}x\right)\right)$$

Determine the time it takes for the particle to move to the right side of the well.