

(d) Instead, consider the potential well:

$$V(x) = \begin{cases} \infty, & x < 0 \\ 0, & 0 < x < a \\ U > 0, & a < x < a + b \\ 0, & x > b \end{cases}$$

suppose at $t = 0$ the electron has a wavefunction $\phi_0(x)$, how does the probability of finding the electron in the potential well vary as a function of time?