



Consider the following barrier potential:

$$V = \begin{cases} 0, & x < -a \\ V_0, & -a \leq x \leq a \\ 0, & x > a \end{cases}$$

where V_0 is a constant.

If a wave of the form $\psi = Ae^{ikx}$, and with energy $E > V_0$, impinges on the barrier from the $-x$ direction, calculate the probability of finding a transmitted component of the wave in the region $x > a$.