

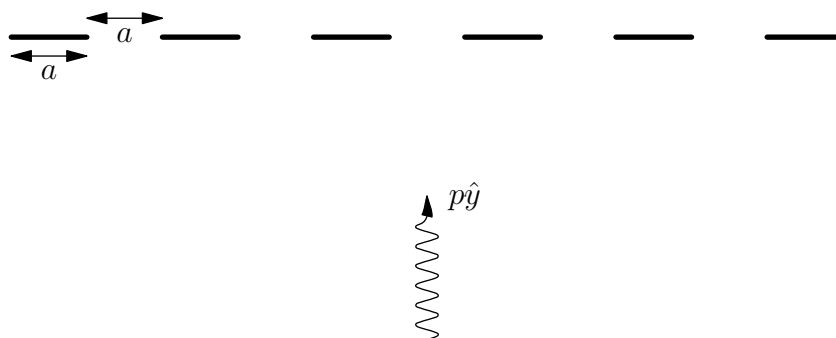
## M01Q.3—Transmission Through a Grid

### Problem

A spinless particle of mass  $m$  is confined to move in two dimensions. On the  $\hat{x}$  axis we place a grid that can be modeled by the following potential:

$$V(x, y) = \begin{cases} \lambda \delta(y) & 2na \leq x \leq (2n+1)a \\ 0 & (2n+1)a < x < (2n+2)a \end{cases}$$

The particle is approaching the grid from below with momentum  $\vec{p} = p\hat{y}$ .



Using the Born approximation, find an expression for the probability for transmission.