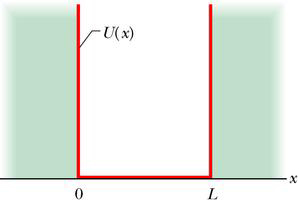
習題三

1. Consider an infinite potential, with boundaries at and : and .



A particle is known to be localized inside the box, with an instantaneous 瞬間 wavefunction at as:

Calculate the constant . Use your result to write down the probability density at at . (25)

解答：

，

1. Consider an electron moving from left to right and is scattered by a step potential at . The step potential is: and .

A picture containing text, sky, map

Description automatically generated

A wave packet formulation of this scattering can be approximated by considering the stationary energy eigenfunction of this step potential. The solution is:

A picture containing diagram

Description automatically generated

Calculate the probability density as a function of in terms of at It is a constant at .

解答：。

A math equation on a white background

Description automatically generated

Sol:

A math equation with black text

Description automatically generated

A math equations on a white background

Description automatically generated

Sol:

A math problem with black text

Description automatically generated with medium confidence

A math equations and formulas

Description automatically generated