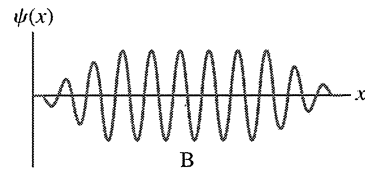
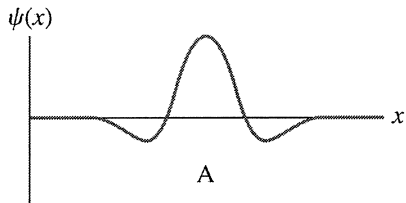


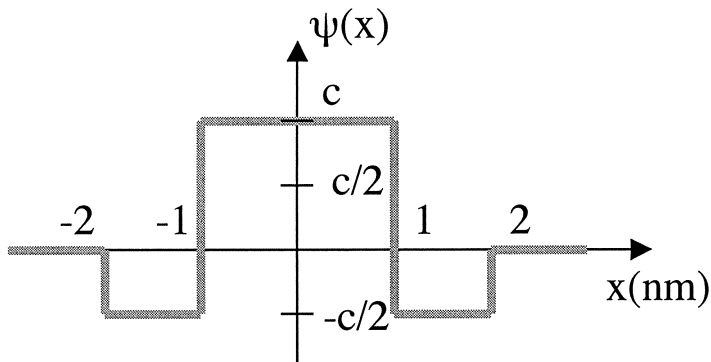
$$P_{\text{prob}}(x_L \leq x \leq x_R) = \int_{x_L}^{x_R} |\psi(x)|^2 dx$$

- 1) Which of these particles, A or B, can you locate more precisely?
 a) A
 b) B
 c) Both can be located with same precision.

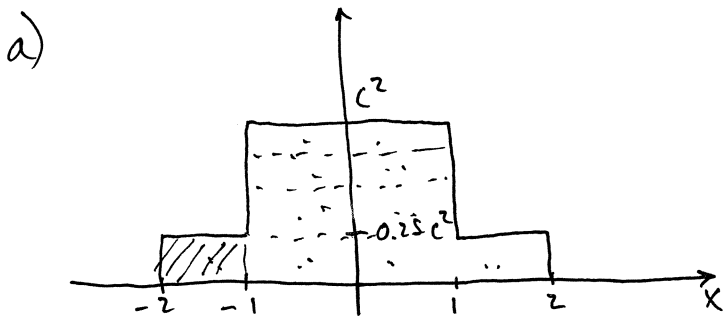


2) The figure shows the wave function of an electron.

- a) What is the value of c ?
 b) Draw a graph of $|\psi|^2$.
 c) What is the probability that the electron is located between $x=1.0\text{nm}$ and $x=2.0\text{ nm}$?



$$\begin{aligned} \text{c) } P_{\text{prob}} &= \int_{1}^{2} |\psi(x)|^2 dx \\ &= (1)(0.25c^2) \\ &= (1)(0.25)(0.6325)^2 \\ &= 0.1 \\ &= 10\% \end{aligned}$$



b) $\int_{-\infty}^{\infty} |\psi|^2 dx = (1)(0.25c^2) + (2)(c^2) + (1)(0.25c^2)$
 $2.5c^2 = 1$
 $c = \sqrt{\frac{1}{2.5}} = 0.6325 \text{ nm}^{-1}$