

The free particle solution to the Schrödinger equation is

$$\psi(x, t) = Ae^{ikx} e^{-iEt/\hbar}$$

Which value of  $k$  would you expect to correspond to the fastest moving wave crests?

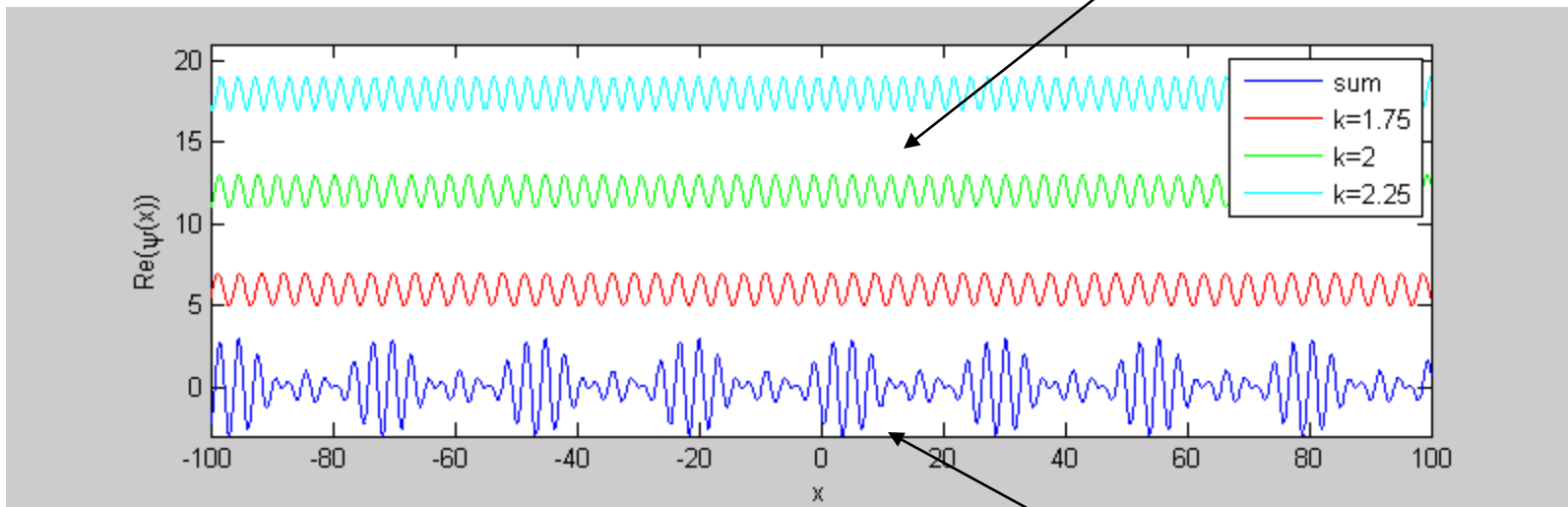
a)  $k=1.75 \text{ m}^{-1}$

b)  $k=2 \text{ m}^{-1}$

c)  $k=2.25 \text{ m}^{-1}$

$$\psi(x, t) = e^{ikx} e^{-iEt/\hbar}$$

travels with phase velocity



travels with group velocity



Consider a particle in a one-dimensional box. The particle is in a state with definite energy (i.e. the state with  $n=1$ ). Is it equally likely to find the particle at any position in the box?

a) No.

b) Yes.

c) Not enough information.