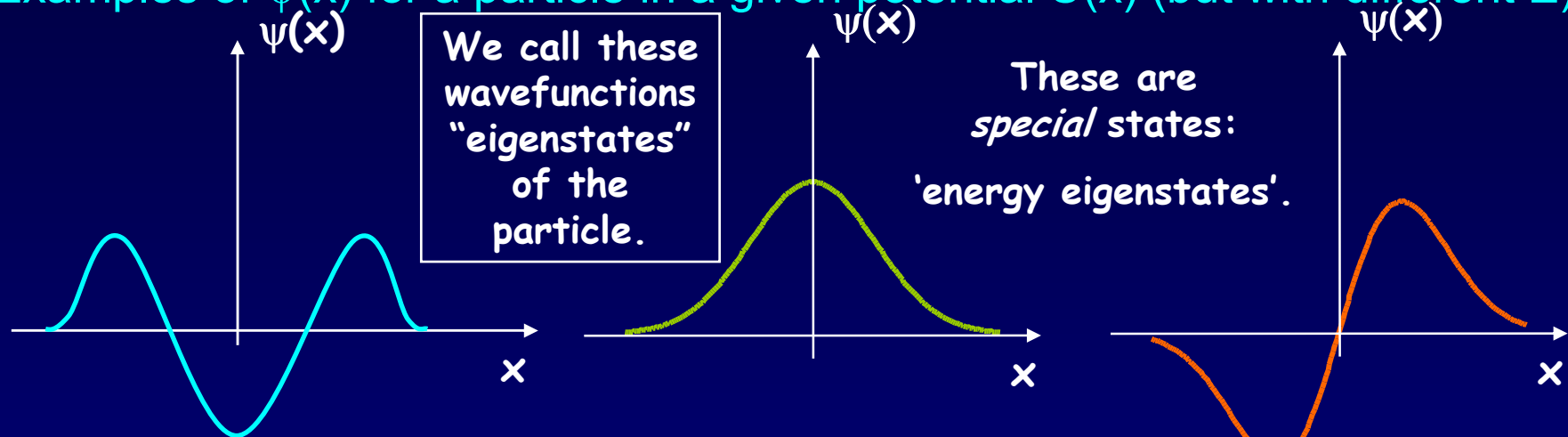


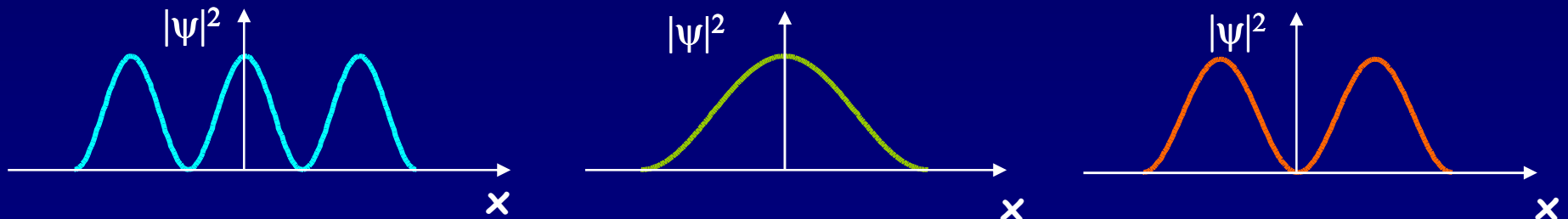
# Particle Wavefunctions: Examples

What do the solutions to the SEQ look like for general  $U(x)$ ?

Examples of  $\psi(x)$  for a particle in a given potential  $U(x)$  (but with different  $E$ ):



The corresponding probability distributions  $|\psi(x)|^2$  of these states are:



Key point: Particle cannot be associated with a specific location  $x$ .

-- like the uncertainty that a particle went through slit 1 or slit 2.

Question: Which corresponds to the lowest/highest kinetic energy?

The particle kinetic energy is proportional to the *curvature* of the wave function.