

# Act 2

Consider a particle in an infinite square well. At  $t = 0$  it is in the state:

$$\Psi(x, t) = 0.5\psi_2(x) + A_2\psi_4(x)$$

with  $\psi_2(x)$  and  $\psi_4(x)$  both normalized.

1. What is  $A_2$ ?  
a. 0.5      b. 0.707      c. 0.866
  
2. At some later time  $t$ ,  
what is the probability density at the center of the well?  
a. 0      b. 1      c. It depends on the time  $t$ .