

- 4) A particle moves along the x - axis with position at time t given by
 $x(t) = e^{-t} \sin t$ for $0 \leq t \leq 2\pi$.

- a) Find the time t at which the particle is farthest to the left.
Justify your answer.

$$t = \frac{5\pi}{4}$$

- 4) A particle moves along the x - axis with position at time t given by
 $x(t) = e^{-t} \sin t$ for $0 \leq t \leq 2\pi$.

- b) Find the value of the constant A for which $x(t)$ satisfies the equation
 $Ax''(t) + x'(t) + x(t) = 0$ for $0 \leq t \leq 2\pi$.

$$A = \frac{1}{2}$$