

Math 1700 Extra Problems for Section 5.7

1) Rectangles are formed with one corner at $(0,0)$ and the opposite corner on the curve $y = e^{-x}$ for $x > 0$. Find the rectangle out of this collection with the largest area.

2) The motion of a damped oscillator is given by

$$x(t) = 3e^{-4t} - 2e^{-t/2},$$

for $t \geq 0$. Find the time when the position $x(t)$ is furthest from equilibrium, $x = 0$.

3) The motion of a damped oscillator is given by

$$x(t) = -2e^{-4t} + 3e^{-t/2},$$

for $t \geq 0$. Find the time when the position $x(t)$ is furthest from equilibrium, $x = 0$.