@ when

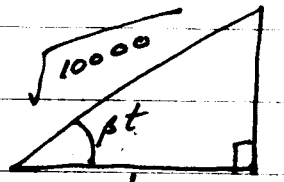
$$\beta t = \tan^{-1}(3\sqrt{1111})$$

$$t = \frac{1}{\beta}\left(\tan^{-1}(3\sqrt{1111})\right)$$

$$\approx 0.156 \text{ sec}$$

Note: Local maxima occur when

$$\tan \beta t = 10\beta = 3\sqrt{1111}$$



so for such t_m

$$\sin t_m = \pm \frac{3\sqrt{1111}}{\sqrt{10000}} = \sqrt{\frac{9999}{10000}}$$

and $y_m = \pm e^{-t_m} \sqrt{\frac{9999}{10000}} \cdot \frac{1}{\beta}$