Quiz #10

1. (2 points) Evaluate the limit

$$\lim_{x \to 0} \frac{e^{2x} - 1 - 2x}{x^2}.$$

2. (5 points) Find the second degree Taylor polynomial of $f(x) = \tan x$ at $x = \frac{\pi}{4}$.

3. (3 points) Sketch the curve

$$x(t) = \sin t$$
 , $y(t) = \cos t$, $\frac{\pi}{2} \le t \le \frac{3\pi}{2}$.

Also indicate in which direction the curve is traversed.