

QUIZ 1 - MATH 251

Friday, January 19

YOUR NAME: _____

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Read each problem **very carefully** before starting to solve it. Each problem is worth 5 points. It is necessary to show **all** your work. Correct answers without explanations are worth 0 points. GOOD LUCK!!

1. Use elimination of parameter to write in the form $y = f(x)$: $\begin{cases} x = e^{-2t} \\ y = 6e^{4t} \end{cases}$.

2. Sketch the graph of $\begin{cases} x = \frac{1}{2}t \\ y = 2t^2 \end{cases}$, $-2 \leq t \leq 2$, showing also the direction of "motion".

3. (a) Find the slope of the tangent line to $(x, y) = (t^{-1} - 3t, t^3)$ at $t = -1$.

(b) Find an equation for the tangent line to the parametric curve

$$\begin{cases} x = \sin 2\theta \\ y = \cos 3\theta \end{cases}$$

at $\theta = \frac{\pi}{6}$.