

Calc I - Review for Quiz 2

We have our next quiz this Fri, Feb 21. All the problems on that quiz will likely look like something you see on this problem sheet, though this sheet is a bit longer than the quiz will be.

1. Compute $\lim_{\theta \rightarrow 0} \frac{\sin(3\theta)}{\theta}$. Be sure to include an intermediate step and connectors like equals signs as appropriate.
2. Consider the equation $2x^2 + xy + y^4 = 1$.
 - a. Exactly one of the points $(1, 0)$ or $(0, 1)$ is on the graph of the equation. Which one is it and why?
 - b. For the point that is on the graph, find equation of the line that goes through that point and is tangent to the graph.
3. Find the derivatives of the following functions.
 - a. $f(x) = x + e^x + \sin(x) - \cos(x)$
 - b. $f(x) = \sin(2x) + \cos(3x)$
 - c. $f(x) = e^{-x^2} \sin(22x)$