Quiz 19
MA 16200
Spring 2020
Suggested Time Limit: 12 minutes

For your benefit, please show your work and simplify your answers.

1. Find the 3rd order Taylor polynomial $P_3(x)$ centered at $a = \frac{\pi}{4}$ for the function $f(x) = \tan x$.

2. Let $f(x)$ be a function such that $f(2)$, $f'(2)$, and $f''(2)$ are defined. Suppose $P_2(x) = 1 + x + x^2$ is the 2nd order Taylor polynomial of $f(x)$ centered at $a = 2$. Find the 1st order Taylor polynomial $P_1(x)$ of $f(x)$ centered at $a = 2$. (Hint: $P_1(x) \neq 1 + x$.)