TMATH 124pm: Quiz 3

Show *all* your work (numerically, algebraically, or geometrically) for each and simplify. No credit is given without supporting work. There are two sides of this quiz.

1. [2] (§3.3 #41) Find the *limit*: $\lim_{x\to 0} \dfrac{\sin(6x)}{\cos(6x)\sin(2x)}$

2. (Exp Wks #3) Let $f(x) = 1 + 2e^x - 3x$.

   (a) [1] Find $\frac{d}{dx}f(x)$.

   (b) [3] At what x value is the line tangent to f also parallel to the line $3x - y = 5$?

3. (WebHW7 #8) Let $g(x) = x + \cos(x)$.

   (a) [1] Find $g'(x)$.

   (b) [3] Find the equation of the line that is tangent to g when $x = \dfrac{-\pi}{6}$.