LAS Calculus
Transcendental Functions
Homework 5

1. Find $f'(x)$ for each of the following.

   (a) $f(x) = 3x^2 + 4\sin(x)$

   (b) $f(x) = 5e^x - 2\cos(x)$

   (c) $f(x) = \ln(x) + \frac{1}{x}$

   (d) $f(x) = 4e^x + 2/x^4$

2. Let $f(x) = 3e^x$. Find an equation for the tangent line to the graph $y = f(x)$ at $x = 0$.

3. Let $f(x) = 3\sin(x) - \cos(x)$. Find an equation for the tangent line to the graph $y = f(x)$ at $x = 0$.

4. Let $f(x) = \ln(x)$. Use the tangent approximation (about $x = 1$) to approximate $f(1.1)$ and $f(0.95)$.