LAS Calculus
More Differentiation Rules
Homework 6

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

    a) $f(x) = 2x^2 \sin(x)$

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

    c) $f(x) = x \ln(x)$

    d) $f(x) = e^x \sin(x)$

    e) $f(x) = \ln(x) \cos(x)$

    f) $f(x) = (2x^3 - 1)^5$

    g) $f(x) = (x^3 + x^2 + x + 1)^7$

    h) $f(x) = 1/(x^2 + 2x)^2$

    i) $f(x) = \cos(2x^2 + 1)$

    j) $f(x) = e^{3x}$

    k) $f(x) = x \sin(2x)$

2. Find the tangent line to the graph of $f(x) = \sqrt{x^2 + 16}$ at $x = 3$.

3. Find the tangent line to the graph of $f(x) = x\sqrt{x + 1}$ at $x = 8$.