ASSIGNMENT 8

MTH101 (2014)

(1) Find $f'(x)$ for each of the following f.
   (a) $f(x) = sin(x + x^2)$.
   (b) $f(x) = sin\ x + sin\ x^2$.
   (c) $f(x) = \frac{e^{sin\ x}}{x^2+5}$.
   (d) $f(x) = sin\big(\frac{x^3}{cos\ x^3}\big)$.
   (e) $f(x) = (x + sin^5\ x)^6$.
   (f) $f(x) = sin(sin(sin(x)))$.
   (g) $f(x) = \frac{1}{\sqrt{x^2+1}}$.

(2) If $f + g$ is differentiable at a, are f and g necessarily differentiable at a? Explain your answer.