Math 141 Quiz 4

Differentiate the following. Simplify your answers.

1) $f(x) = 3x^7 - x^2 + \frac{1}{x^{3/2}} - e^x + 1000$

$f'(x) = 21x^6 - 2x - \frac{3}{2}x^{-5/2} - e^x$

2) $f(x) = \frac{\sin(x)}{1+\sin(x)}$

$f'(x) = \frac{(\sin x)'(1+\sin x) - \sin(x)(1+\sin x)'}{(1+\sin x)^2}$

$= \frac{\cos x(1+\sin x) - \sin x(\cos x)}{(1+\sin x)^2} = \frac{\cos x}{(1+\sin x)^2}$