Practice Problems — 02/14/05

(1) Let $f(x) = x^3 + \frac{3}{2}x^2 - 18x + 1$. Find all relative maxima and minima of f.

(2) Find all relative maxima and minima of the function $f(x)$ for which $f'(x) = e^{\sqrt[3]{\sin(\cos(\sin(x)))}}$.

Compute the following:

(3) $\dfrac{d}{dx}\left[\tan(x)\right]$

(4) $\dfrac{d}{dx}\left[\sec(x)\right]$

(5) $\dfrac{d}{dx}\left[\cot(x)\right]$

(6) $\dfrac{d}{dx}\left[\csc(x)\right]$

(7) $\dfrac{d}{dx}\left[\sin^2(x) + \cos^2(x)\right]$