18.01 Single Variable Calculus
Fall 2006

The following formulas will be printed with Exam 4.

$$\sin^2 x + \cos^2 x = 1; \quad \sec^2 x = \tan^2 x + 1$$

$$\sin^2 x = \frac{1}{2} - \frac{1}{2}\cos 2x; \quad \cos^2 x = \frac{1}{2} + \frac{1}{2}\cos 2x$$

$$\cos 2x = \cos^2 x - \sin^2 x; \quad \sin 2x = 2\sin x \cos x$$

$$\frac{d}{dx}\tan x = \sec^2 x; \quad \frac{d}{dx}\sec x = \sec x \tan x; \quad \frac{d}{dx}\tan^{-1} x = \frac{1}{1+x^2}; \quad \frac{d}{dx}\sin^{-1} x = \frac{1}{\sqrt{1-x^2}}$$

$$\int \tan x\, dx = -\ln(\cos x) + c; \quad \int \sec x\, dx = \ln(\sec x + \tan x) + c$$