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18.01 Single Variable Calculus Fall 2006

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## The following formulas will be printed with Exam 4.

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

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

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

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

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