Department of Mathematical Sciences   Spring 2002
Carnegie Mellon University

21-112 Calculus II

Announcement of Test #2

Test #2 will be administered in lecture on Friday, March 1, 2002. This is a
closed-book and closed-note exam. Calculators are not permitted. Test #2
will cover Sections 6.1 through 6.5 and Sections 9.1 and 9.2.

The following identities and formulae will be provided with the exam:

Identities

$$\sin(\theta + \phi) = \sin\theta\cos\phi + \cos\theta\sin\phi \qquad \cos 2\theta = \cos^2\theta - \sin^2\theta$$

$$\cos(\theta + \phi) = \cos\theta\cos\phi - \sin\theta\sin\phi \qquad \sin\theta = \cos\left(\tfrac{\pi}{2} - \theta\right)$$

$$\sin^2\theta = \tfrac{1}{2}(1 - \cos 2\theta) \qquad \cos\theta = \sin\left(\tfrac{\pi}{2} - \theta\right)$$

$$\cos^2\theta = \tfrac{1}{2}(1 + \cos 2\theta) \qquad \sin(-\theta) = -\sin\theta$$

$$\sin 2\theta = 2\sin\theta\cos\theta \qquad \cos(-\theta) = \cos\theta$$

$$\sin^2\theta + \cos^2\theta = 1$$

Integration Formulae

$$\int \tan x \, dx = \ln|\sec x| + C \qquad \int \cot x \, dx = \ln|\sin x| + C$$

$$\int \sec x \, dx = \ln|\sec x + \tan x| + C \qquad \int \csc x \, dx = \ln|\csc x - \cot x| + C$$