

Midterm 2 Formula Sheet

Math 1B, Summer 2008

Rob Bayer

Some, all, or none of the following may be helpful to you:

Trig Stuff

Product Rules:

$$\sin A \cos B = \frac{1}{2}(\sin(A - B) + \sin(A + B))$$

$$\sin A \sin B = \frac{1}{2}(\cos(A - B) - \cos(A + B))$$

$$\cos A \cos B = \frac{1}{2}(\cos(A - B) + \cos(A + B))$$

Double/Half Angle:

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

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

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

$$\tan(2x) = \frac{2 \tan(x)}{1 - \tan^2(x)}$$

Other:

$$\int \sec x = \ln(\sec x + \tan x) + C$$

$$\frac{d}{dx} \sin^{-1} x = \frac{1}{\sqrt{1-x^2}}$$

$$\sin(2x) = 2 \sin(x) \cos(x)$$

$$\cos(2x) = 1 - 2 \sin^2(x)$$

$$\cos(2x) = 2 \cos^2(x) - 1$$

$$\cos(2x) = \cos^2(x) - \sin^2(x)$$

$$\int \csc x = \ln(\csc x - \cot x) + C$$

$$\frac{d}{dx} \cos^{-1} x = -\frac{1}{\sqrt{1-x^2}}$$

Variation of Parameters

$$u_1' = -\frac{y_2 G(x)}{a(y_1 y_2' - y_1' y_2)}$$

$$u_2' = \frac{y_1 G(x)}{a(y_1 y_2' - y_1' y_2)}$$