Chapter 7 Section 2

MA1032 Data, Functions & Graphs

Sidney Butler

Michigan Technological University

November 27, 2006

Summary I

- Tangent identity:

$$\tan t = \frac{\sin t}{\cos t}$$

- Pythagorean identity:

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

- Negative angle identities:

$$\sin(-t) = -\sin t \quad \cos(-t) = \cos t \quad \tan(-t) = -\tan t$$

- Identities relating sine and cosine:

$$\sin t = \cos(t - \frac{\pi}{2}) \quad \cos t = \sin(t + \frac{\pi}{2})$$

Summary II

- Double-angle formula for sine:

$$\sin 2t = 2 \sin t \cos t$$

- Double-angle formulas for cosine:

$$\cos 2t = 1 - 2 \sin^2 t$$

$$\cos 2t = 2 \cos^2 - 1$$

$$\cos 2t = \cos^2 t - \sin^2 t$$

- Double-angle formula for tangent:

$$\tan 2t = \frac{2 \tan t}{1 - \tan^2 t}$$