Chapter 6 Section 6

MA1032 Data, Functions & Graphs

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November 7, 2006

Trig Functions in terms of x, y and r

- $\sin\theta = \frac{y}{r}$
- $\cos\theta = \frac{x}{r}$
- $\tan\theta = \frac{y}{x}$

Some Identities

- $\tan(\theta + \pi) = \tan\theta$
- $\tan\theta = \frac{\sin\theta}{\cos\theta}$
- $\cos^2\theta + \sin^2\theta = 1$

Those other trig functions

- $\csc\theta = \frac{hyp}{opp}$
- $\sec\theta = \frac{hyp}{adj}$
- $\cot\theta = \frac{adj}{opp}$

More Identities

- $\csc\theta = \frac{1}{\sin\theta}$
- $\sec\theta = \frac{1}{\cos\theta}$
- $\cot\theta = \frac{1}{\tan\theta}$
- $1 + \tan^2\theta = \sec^2\theta$

Why the identities?

Example

What is $(\sin x - \cos x)^2 + 2\cos x \sin x$ squared?
Simplify $(\sin x - \cos x)^2 + 2\cos x \sin x$ first.

Summary

- $y = \tan x$
- Trig Identities