MATH 21-111
Fall 2007

Week 3

Practice Problems

Solve Equations:

- $\sin x = 0$
- $\cos x = 0$
- $\tan x = 0$

Hint: use graph representations of the functions $y = \sin x, y = \cos x,\ y = \tan x$

If $|x| \leq 1$*, find the estimates for the functions below in the form of* $a \leq y(x) \leq b$*, where* a *and* b *some real numbers:*

- $y(x) = x$
- $y(x) = 2x - 1$
- $y(x) = 1 - x$

Hint: use the definition of the $|x| : |x| = x$*, if* $(x \geq 0)$*,* $|x| = -x$*, if* $(x < 0)$

Prove the following statement:

- $2 - \sin 100x > 0$*, for any real* x

Determine the domain of the definition and range of the functions:

- $f(x) = |x| - 1$
- $f(x) = \frac{x^3}{x^2 - x - 2}$
- $f(x) = \sqrt{x - 8}$