Math 49B (8:30am – 9:20am)
Group Quiz 1
Wed Oct 1, 2008

Group Members' Names: _____

SCORE: ___ / 10 POINTS

NO CALCULATORS ALLOWED

Sketch two full periods of the graph of $y = 2\sec(2\pi x + \pi) + 3$.
Label the 3 y-coordinates and 9 x-coordinates discussed in class.

SCORE: ___ / 6 POINTS

$y = 2\cos(2\pi x + \pi) + 3$

PERIOD $= \frac{2\pi}{2\pi} = 1$ $\quad \frac{1}{4}$ PERIOD $= \frac{1}{4}$

AMP $= 2$

MID $= 3$

START $= -\frac{\pi}{2\pi} = -\frac{1}{2}$

DIRECTION $\cup$

$-\frac{1}{2} + \frac{1}{4} = -\frac{2}{4} + \frac{1}{4} = -\frac{1}{4}$

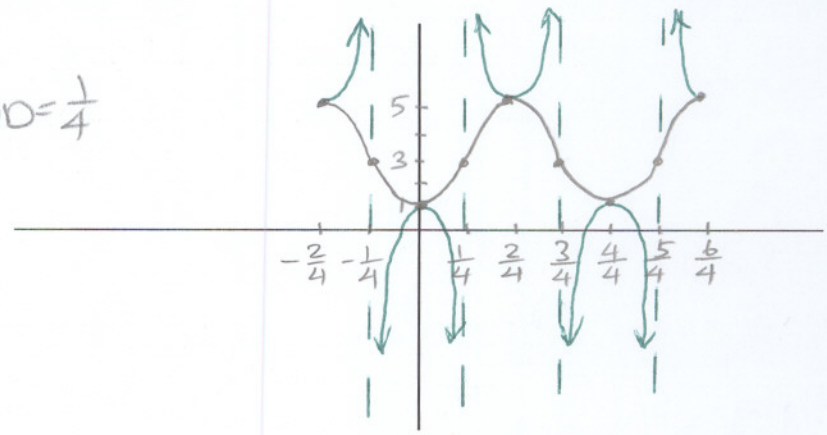
$-\frac{1}{4} + \frac{1}{4} = \frac{0}{4}$

$\frac{1}{4}$

$\frac{2}{4}$

$\vdots$

AND VICE VERSA



SEC GRAPH IN GREEN

CORRECT y-COORDINATES = 1 POINT
x- = 1
COS GRAPH = 1
ASYMPTOTES THROUGH MIDLINE = 1
→COS HILLS = SEC VALLEYS = 1
COS + SEC TOUCH AT HILLS/VALLEYS = 1

In words, describe the behavior of the graph of $y = \sec x$ as x approaches $\frac{\pi}{2}$ [a] from the left and [b] from the right.

NOTE: A graph of the function is **NOT** enough. You must describe it in words.

SCORE: ___ / 2 POINTS

[a] GRAPH GOES UP TO $+\infty$ 1

[b] DOWN $-\infty$ 1

Consider the functions $y_1 = 1 - \frac{\cos 2\pi x}{2!}$ and $y_2 = 1 - \frac{\cos 2\pi x}{2!} + \frac{\cos 4\pi x}{4!}$, which approximate a sawtooth wave. Follow the pattern in the terms and find 2 functions y_3 and y_4 which are better approximations.

SCORE: ___ / 2 POINTS

$y_3 = \underbrace{1 - \frac{\cos 2\pi x}{2!} + \frac{\cos 4\pi x}{4!}}_{\frac{1}{4}} \underbrace{- \frac{\cos 6\pi x}{6!}}_{\frac{3}{4}}$

$y_4 = \underbrace{1 - \frac{\cos 2\pi x}{2!} + \frac{\cos 4\pi x}{4!} - \frac{\cos 6\pi x}{6!}}_{\frac{1}{4}} \underbrace{+ \frac{\cos 8\pi x}{8!}}_{\frac{3}{4}}$