

10/7/08: Today: Review for Exam 2

Thursday

- Exam 2, ch. 3-4
- ch 4.1-4.4 HW due

Formulas to memorize:

$$s = r\theta \rightarrow \text{arc length}$$

$$\omega = \frac{\theta}{t} \rightarrow \text{angular velocity}$$

$$\left\{ \begin{array}{l} v = \frac{s}{t} \\ v = r\omega \end{array} \right. \rightarrow \text{velocity of a point on an arc} \\ \text{aka linear velocity}$$

Period:

sine, cosine, Secant and cosecant
 $\frac{2\pi}{b}$

tangent and cotangent:

$$\frac{\uparrow}{b}$$

amplitude: $|a|$

$$\textcircled{1} f(x) = 2 - \sin(3x - \pi)$$

$$\textcircled{2} g(x) = \frac{1}{3} \sec\left(\frac{x}{2}\right)$$

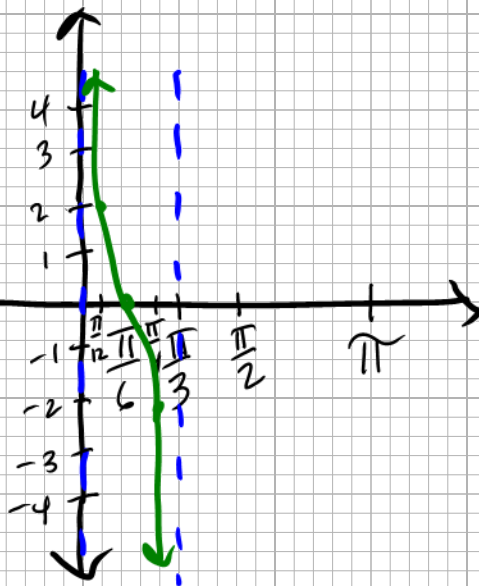
$$f(x) = 2 \cot 3x$$

asymptotes for $\cot x$: $x = 0, x = \pi$

$$\frac{0}{3} < \frac{3x}{3} < \frac{\pi}{3}$$

$$0 < x < \frac{\pi}{3}$$

x	$f(x)$
0	0
2	2
-2	-2



$$f(x) = 2 - \sin(3x - \pi)$$

$$0 < 3x - \pi \leq 2\pi$$

$$+\pi \quad +\pi \quad +\pi$$

$$\pi \leq \frac{3x}{3} \leq \frac{3\pi}{3}$$

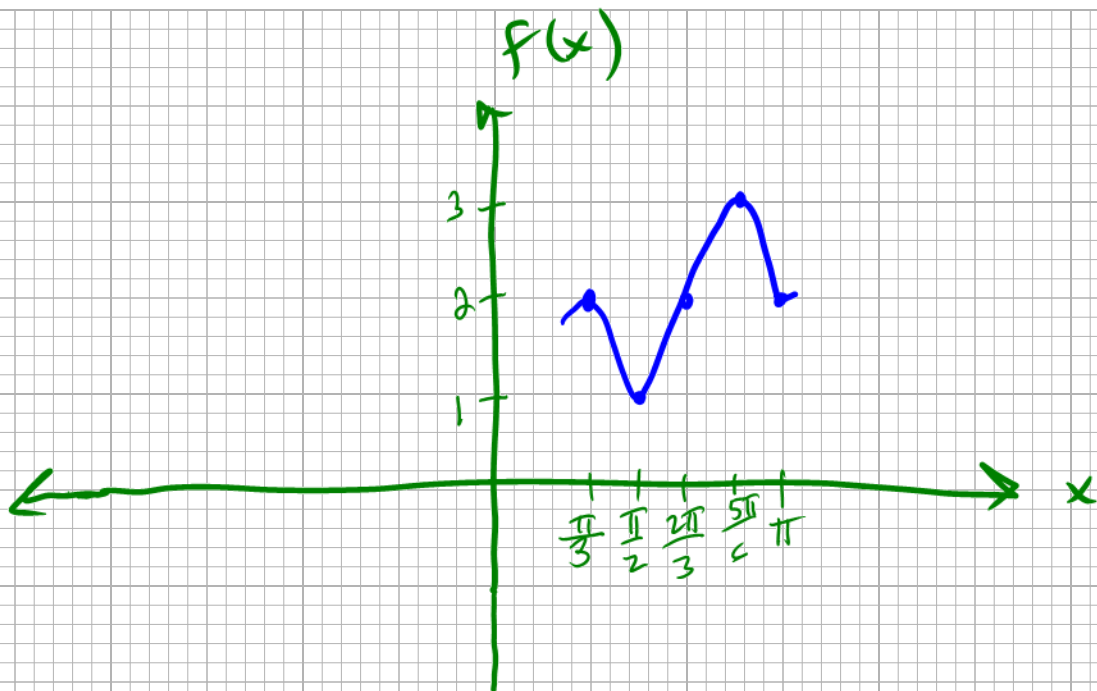
$$\frac{\pi}{3} \leq x \leq \pi$$

x	$-\sin(3x - \pi)$	$f(x)$	$(x, f(x))$
$\frac{\pi}{3}$	0	2	$(\frac{\pi}{3}, 2)$
$\frac{\pi}{2}$	-1	1	$(\frac{\pi}{2}, 1)$
$\frac{2\pi}{3}$	0	2	$(\frac{2\pi}{3}, 2)$
$\frac{5\pi}{6}$	1	3	$(\frac{5\pi}{6}, 3)$
π	0	2	$(\pi, 2)$

period: $\pi - \frac{\pi}{3} = \frac{2\pi}{3}$

quad. x's: $\frac{\pi}{3} \div 4 = \frac{2\pi}{12} = \frac{\pi}{6}$

horizontal. $\frac{\pi}{3}$ to the right



green graph \rightarrow $\boxed{g(x) = \frac{1}{3} \sec\left(\frac{x}{2}\right)}$ $y = \frac{1}{3} \cos\left(\frac{x}{2}\right)$

$a = \left|\frac{1}{3}\right| = \frac{1}{3}$

period: $\frac{2\pi}{\frac{1}{2}} = 4\pi$

