Sec 4.5 Graphs of Sine and Cosine Function

Part 1: pg 330 # 1-13 odd, 27, 29, 39, 41

#1) $y = 3\sin 2x$

amp: $|3| = 3$

Period: $\frac{2\pi}{2} = \pi$

#3) $y = \frac{5}{2}\cos\frac{x}{2}$

amp: $|5/2| = 5/2$

Period: $\frac{2\pi}{1/2} = 4\pi$

#5) $y = \frac{2}{3}\sin \pi x$

amp: $|2/3| = 2/3$

Period: $\frac{2\pi}{\pi} = 2$

#7) $y = -2\sin x$

amp: $|-2| = 2$

Period: $\frac{2\pi}{1} = 2\pi$

#9) $y = 3\sin 6x$

amp: $|3| = 3$

Period: $\frac{2\pi}{6} = \frac{\pi}{3}$

#11) $y = 1/4\cos\frac{2x}{3}$

amp: $|1/4| = 1/4$

Period: $\frac{2\pi}{2/3} = \frac{6\pi}{2} = 3\pi$

#13) $y = 3\sin 4\pi x$

amp: $|3| = 3$

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

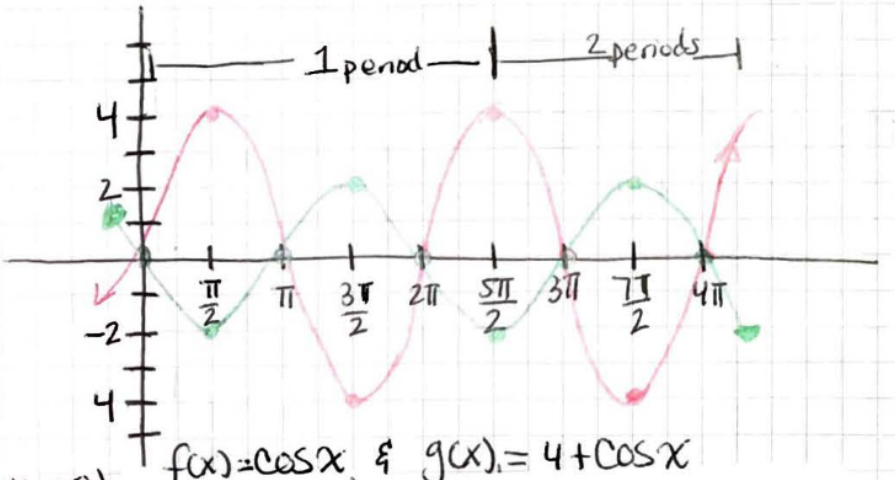
#27) $f(x) = -2\sin x$ & $g(x) = 4\sin x$ (Two full periods)

$-2\sin x$

x	y
0	0
$\pi/2$	-2
π	0
$3\pi/2$	2
2π	0

$4\sin x$

x	y
0	0
$\pi/2$	4
π	0
$3\pi/2$	-4
2π	0



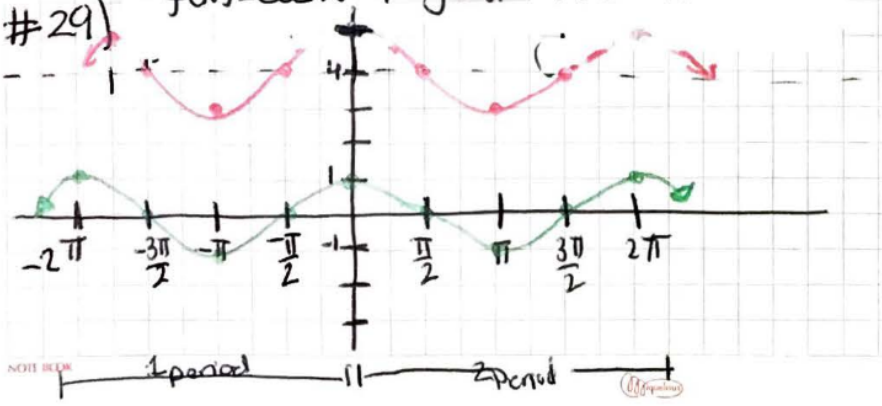
#29) $f(x) = \cos x$ & $g(x) = 4 + \cos x$

$\cos x$

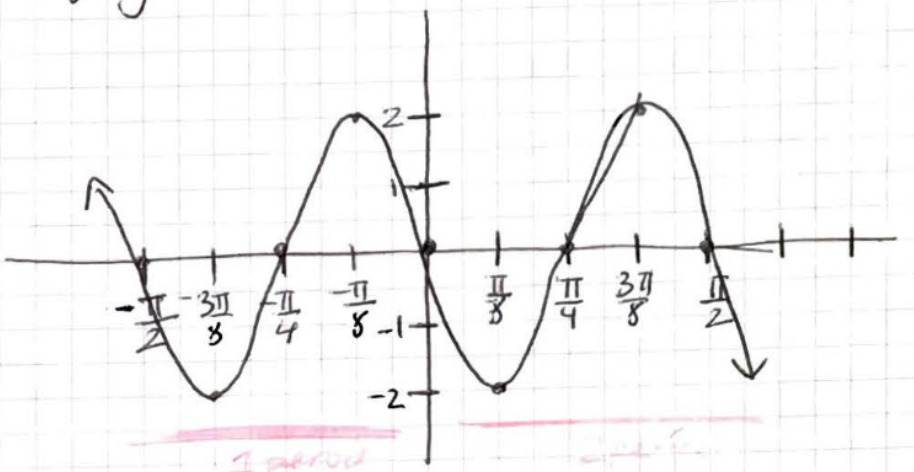
x	y
0	1
$\pi/2$	0
π	-1
$3\pi/2$	0
2π	1

$4 + \cos x$

x	y + 4
0	5
$\frac{\pi}{2}$	4
π	3
$\frac{3\pi}{2}$	4
2π	5



#39) $y = -2\sin 4x$ (Two full periods)



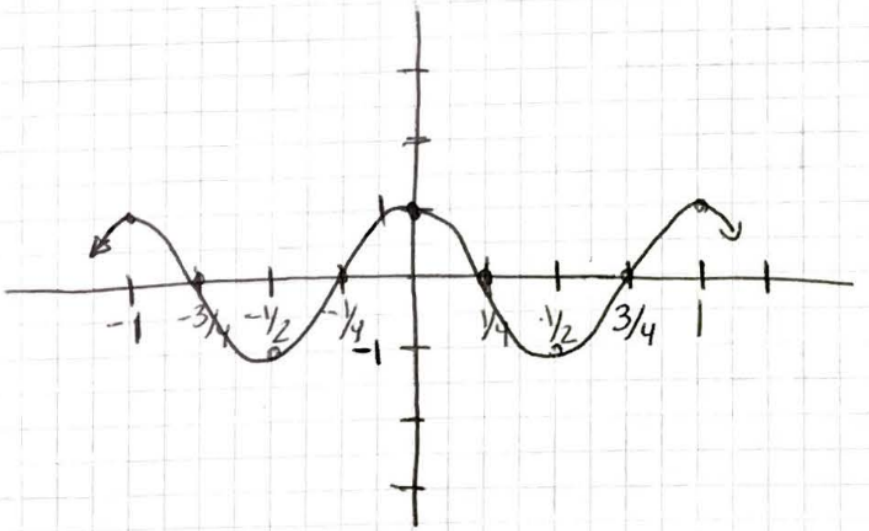
Period $= \frac{2\pi}{4} = \frac{\pi}{2}$

amp $= |-2| = 2$

Inc $\frac{\pi}{2} \div 4 = \frac{\pi}{8}$

x	y
0	0
$\frac{\pi}{8}$	$-2(\sin 4(\frac{\pi}{8})) = -2(\sin\frac{\pi}{2}) = -2$
$\frac{2\pi}{8}$ $\frac{\pi}{4}$	$-2(\sin 4(\frac{1}{4})) = -2(\sin\pi) = 0$
$\frac{3\pi}{8}$ $\frac{3\pi}{8}$	$-2(\sin 4(\frac{3\pi}{8})) = -2(\sin\frac{3\pi}{2}) = 2$
$\frac{4\pi}{8}$ $\frac{\pi}{2}$	$-2(\sin 4(\frac{\pi}{2})) = -2(\sin 2\pi) = 0$

#41) $y = \cos 2\pi x$ (Two full periods)



amp $= |1| = 1$

Period $= \frac{2\pi}{2\pi} = 1$

Inc $= \frac{1}{4} =$

x	y
0	1
1/4	0
1/2	-1
3/4	0
1	1