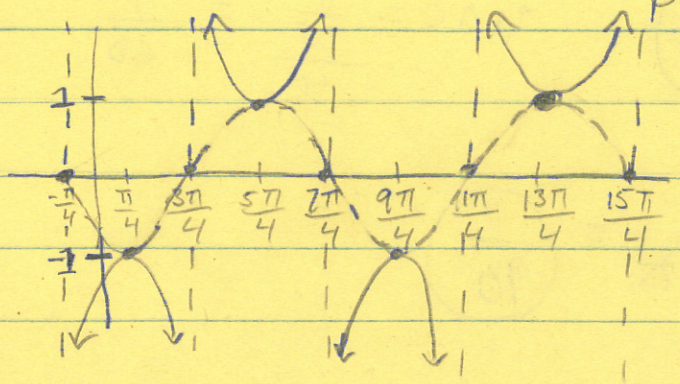
p.424 #'s 37, 43 ; p.435 #19

37.) $y = -\csc\left(x + \frac{\pi}{4}\right)$

$y = -\sin\left(x + \frac{\pi}{4}\right)$ Amp $= |-1| =$ (1), per $= \frac{2\pi}{b} = \frac{2\pi}{1} =$ (2π)

inc $=$ per$/4 = 2\pi/4 =$ (π/2)

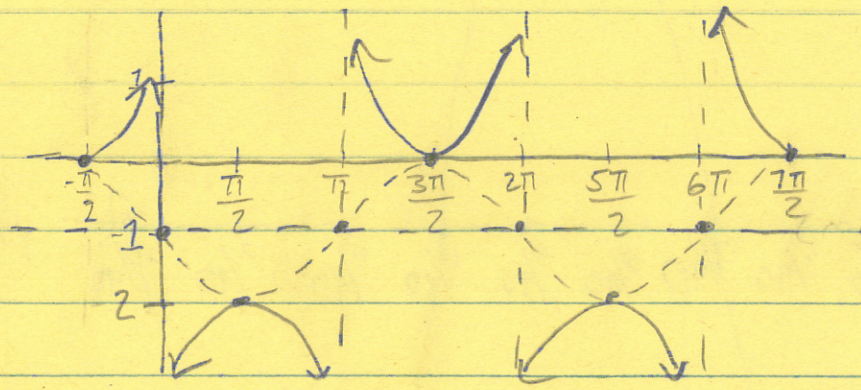
PS $= \frac{c}{b} = \frac{-\frac{\pi}{4}}{1} =$ $\left(\frac{-\pi}{4}\right)$



43.) $y = \sec\left(x + \frac{\pi}{2}\right) - 1$

$y = \cos\left(x + \frac{\pi}{2}\right) - 1$ Amp $= |1| =$ (1); per $=$ (2π); inc $= \frac{2\pi}{4} =$ $\left(\frac{\pi}{2}\right)$

PS $= \frac{-\frac{\pi}{2}}{1} =$ $\left(\frac{-\pi}{2}\right)$ $d = -1$



← (midline) like your new x-axis.

- VA's occur wherever the sine or cosine functions intersect the midline when graphing A csc or sec function

19.) $I = 120 \sin\left(30\pi t - \frac{\pi}{3}\right)$, $t \geq 0$

$A = 120$, $b = 30\pi$, $c = \frac{\pi}{3}$, $d = 0$

- Period $= \frac{2\pi}{b} = \frac{2\pi}{30\pi} = \boxed{\frac{1}{15}}$ $\quad$ $\cdot \text{inc} = \frac{\frac{1}{15}}{4} = \frac{1}{60}$
- Amplitude $= |120| = \boxed{120}$
- PS $\rightarrow \frac{c}{b} = \frac{\pi/3}{30\pi} = \frac{\pi}{3} \cdot \frac{1}{30\pi} = \boxed{\frac{1}{90}}$