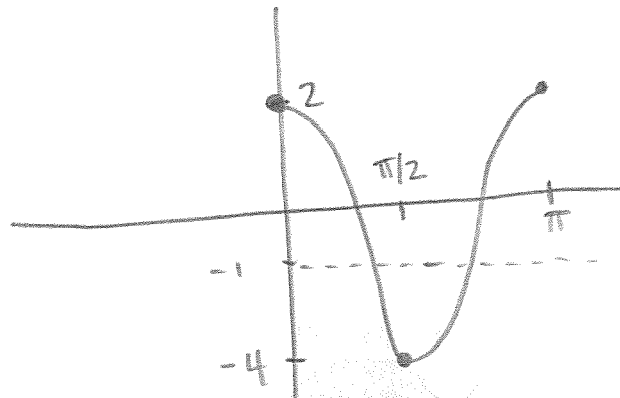


§8.1 #24 Given picture:



Solve: midline: is exactly between 2 and -4



Can find by diagram or by finding average of 2 and -4:

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

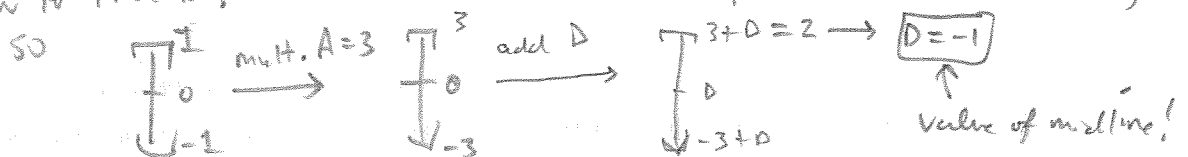
amplitude: is distance from midline to peak height which is 3

period: π because the length of one period of the cosine goes from 0 to π

$$\text{period} = \frac{2\pi}{B} \Rightarrow B = \frac{2\pi}{\text{per}} = \frac{2\pi}{\pi} = 2$$

So in formula $A \cos(Bx) + D$, A is amplitude, 3

How to find D? It is v. shift and so amplitude is vertical stretch, $B=2$ as shown above



Therefore equation is

$$3 \cos(2x) - 1$$

§8.2

#22) Sketch $y(x) = \tan(\frac{\pi}{2}x)$

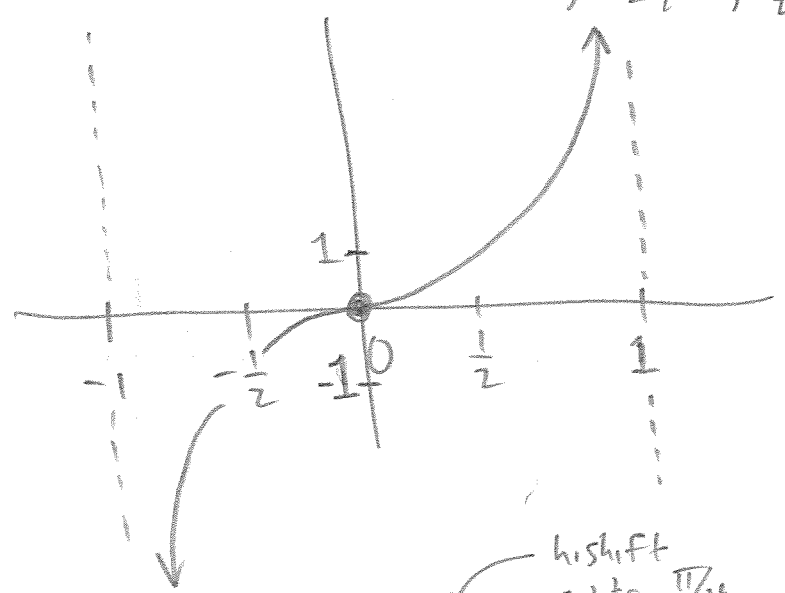
h. comp
div by $\frac{\pi}{2}$

$$\frac{\pi/4}{\pi/2} = \frac{\pi}{4} \cdot \frac{2}{\pi} = \frac{2}{4} = \frac{1}{2}$$

Soln: Anchor pts: $-\frac{\pi}{2}, -\frac{\pi}{4}, 0, \frac{\pi}{4}, \frac{\pi}{2}$

div by $\frac{\pi}{2}$

$-1, -\frac{1}{2}, 0, \frac{1}{2}, 1$



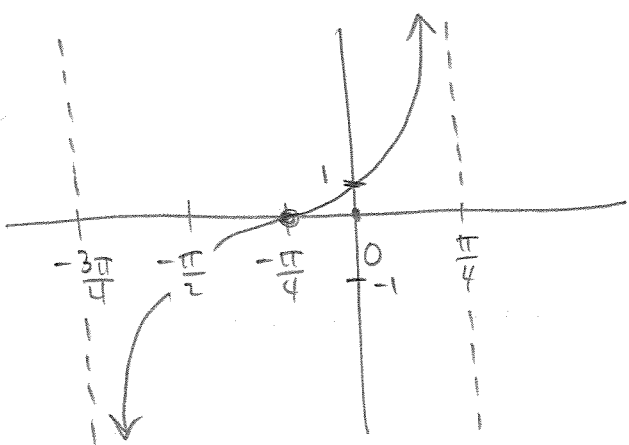
#25) Sketch $f(x) = \tan(x + \frac{\pi}{4})$

h. shift
subtr. $\frac{\pi}{4}$

Soln: Anchor pts: $-\frac{\pi}{2}, -\frac{\pi}{4}, 0, \frac{\pi}{4}, \frac{\pi}{2}$

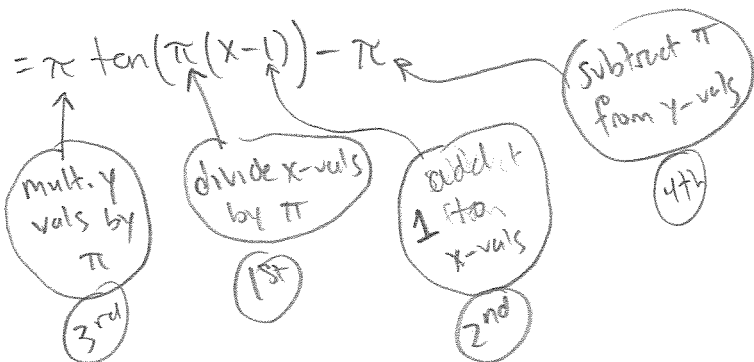
subtr $\frac{\pi}{4}$

$-\frac{3\pi}{4}, -\frac{\pi}{2}, -\frac{\pi}{4}, 0, \frac{\pi}{4}$



#26) $f(x) = \pi \tan(\pi x - \pi) - \pi$

(3)



Soln: Anchor pts: $-\frac{\pi}{2}, -\frac{\pi}{4}, 0, \frac{\pi}{4}, \frac{\pi}{2}$
 \downarrow div by π
 $-\frac{1}{2}, -\frac{1}{4}, 0, \frac{1}{4}, \frac{1}{2}$
 \downarrow add 1
 $\frac{1}{2}, \frac{3}{4}, 1, \frac{5}{4}, \frac{3}{2}$

