

section 8.2

Graph of Tangent trigonometric function (only)
in online text

$$y = A \tan(B(x-h)) + k$$

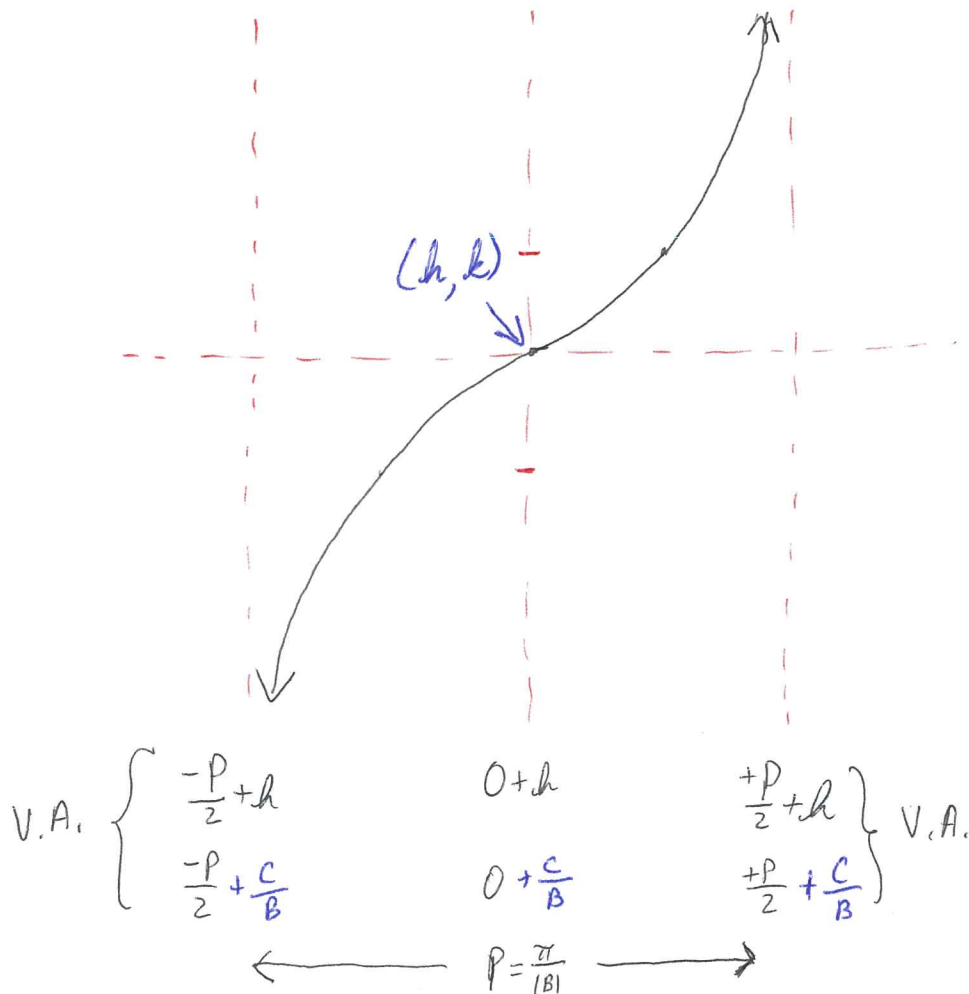
$$y = A \tan(Bx - c) + D$$

Amplitude: $|A|$

frequency: $B \rightarrow$ Period: $P = \frac{\pi}{|B|}$ *note: Period is different to Sine and Cosine*

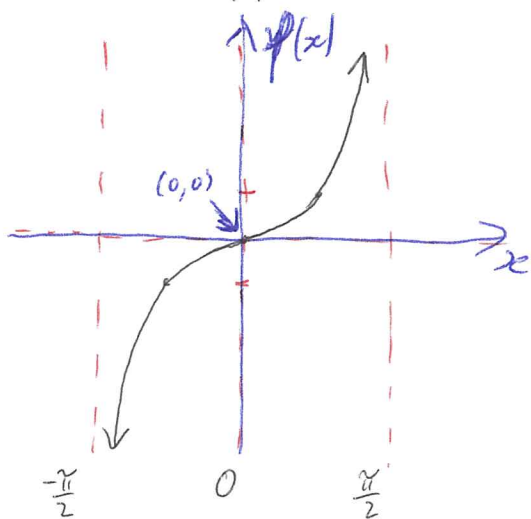
Phase Shift (Horizontal shift): h $\frac{c}{B}$

Vertical shift: k D



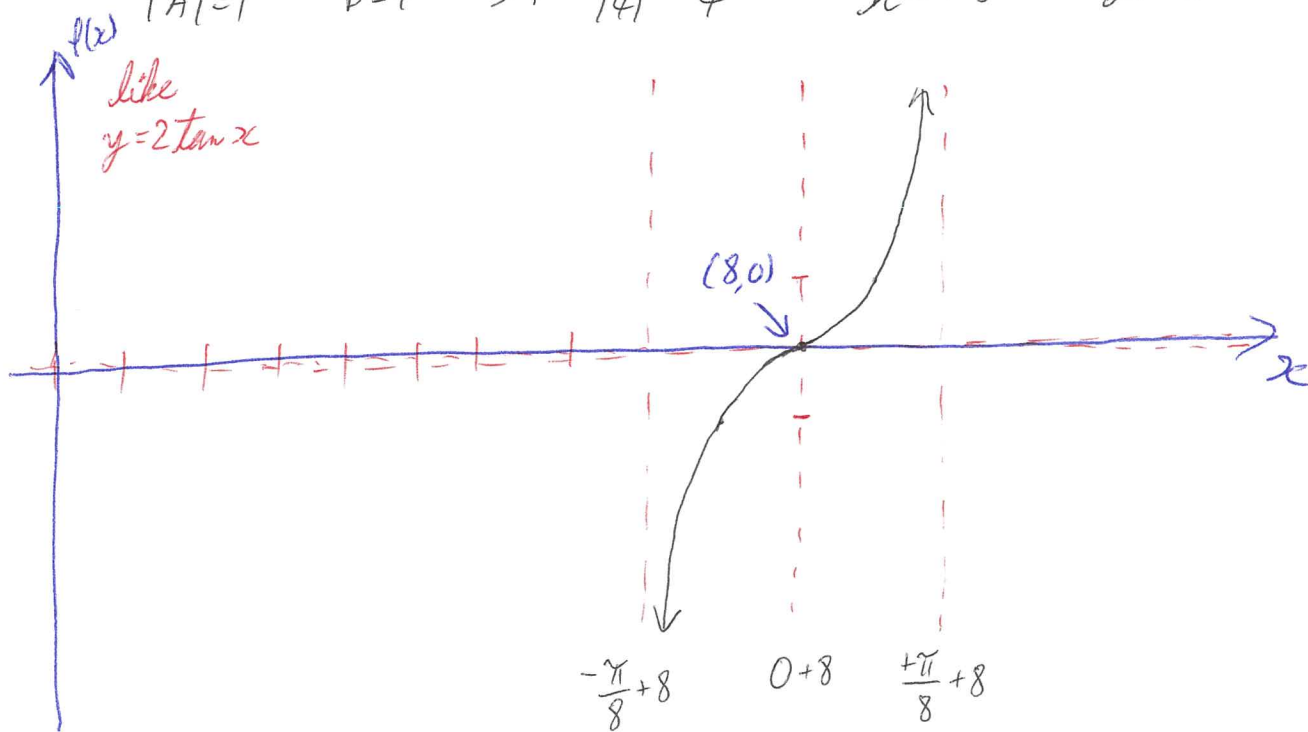
$$6) f(x) = \tan x = 1 \tan(1(x-0)) + 0$$

$$|A|=1 \quad B=1 \rightarrow P = \frac{\pi}{11} = \pi \quad h=0 \quad k=0$$



$$10) f(x) = 2 \tan(4x-32) = 2 \tan(4(x-8)) + 0$$

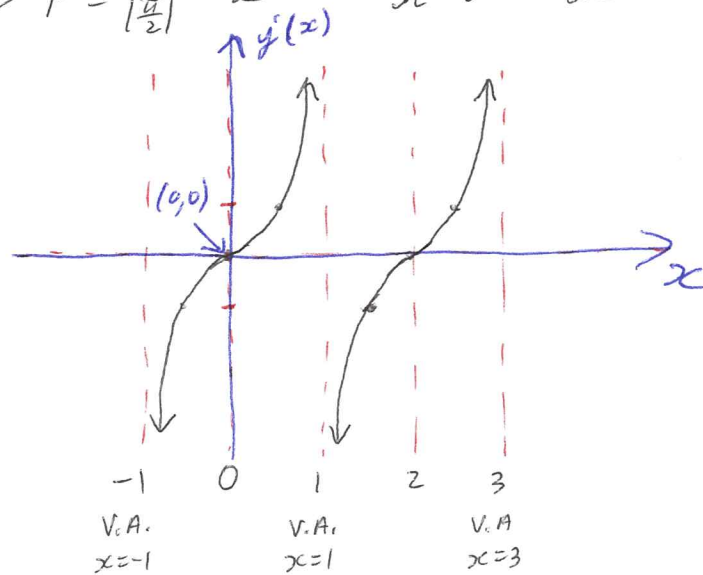
$$|A|=1 \quad B=4 \rightarrow P = \frac{\pi}{4} = \frac{\pi}{4} \quad h=+8 \quad k=0$$



$$22) f(x) = \tan\left(\frac{\pi}{2}x\right) = 1 \tan\left(\frac{\pi}{2}(x-0)\right) + 0$$

$$|A|=1 \quad B=\frac{\pi}{2} \rightarrow P=\frac{\pi}{|\frac{\pi}{2}|}=2 \quad h=0 \quad k=0$$

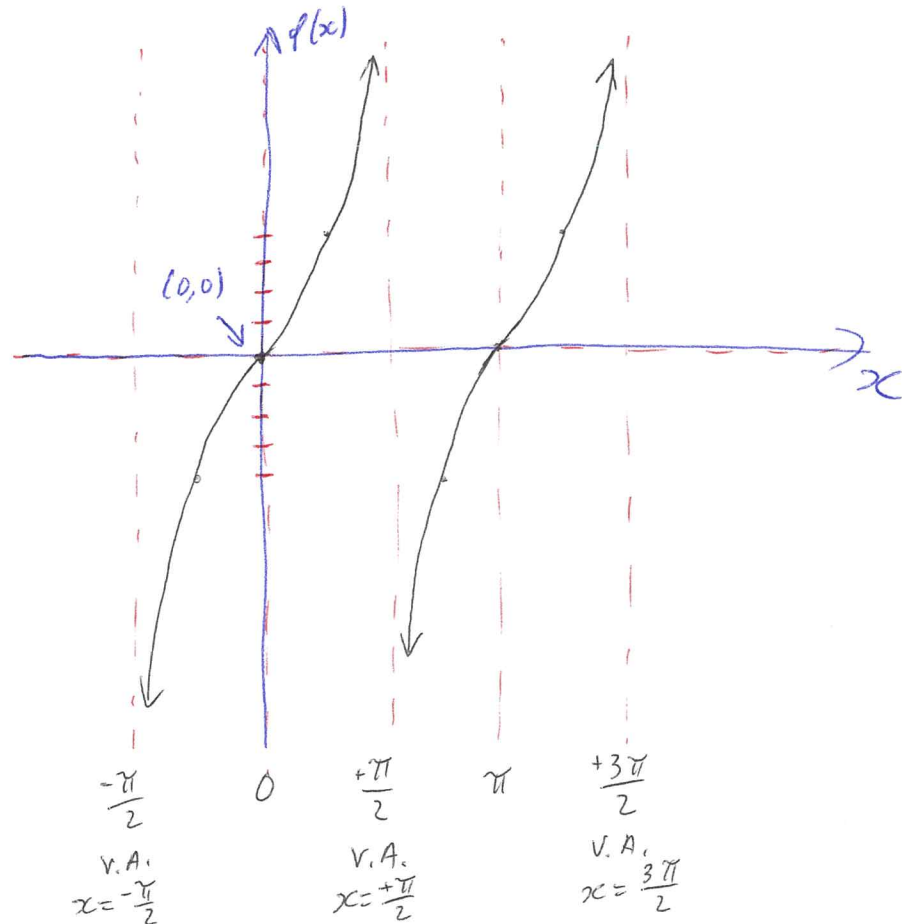
like
 $y = \tan x$



$$24) f(x) = 4 \tan(x) = 4 \tan(1(x-0)) + 0$$

$$|A|=4 \quad B=1 \rightarrow P=\frac{\pi}{1}=\pi \quad h=0 \quad k=0$$

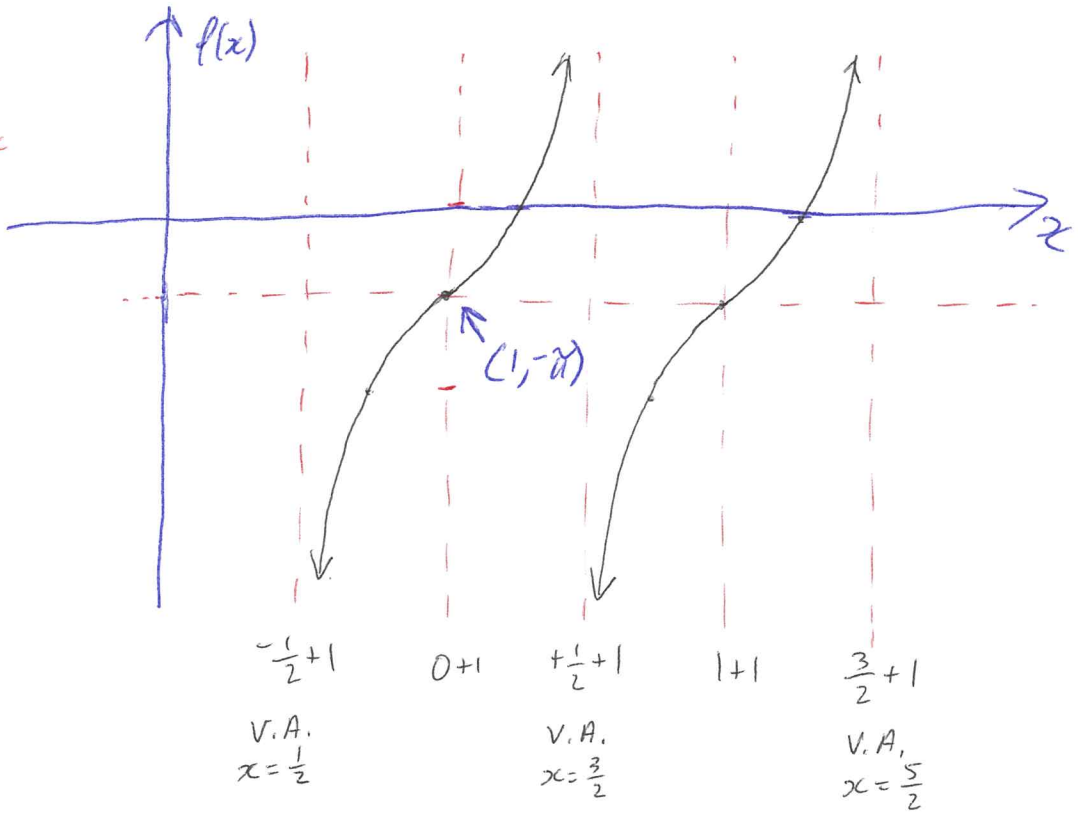
like
 $y = 4 \tan x$



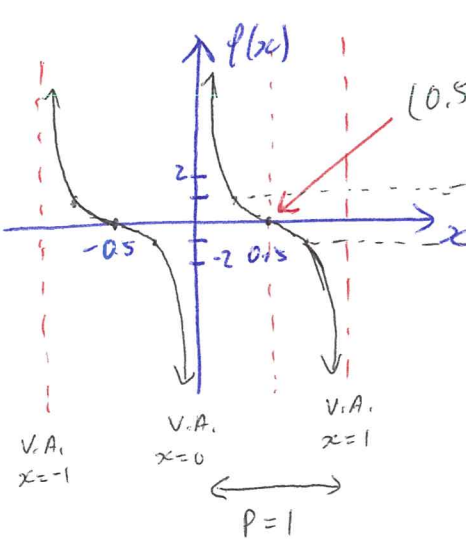
26) $f(x) = \pi \tan(\pi x - \pi) - \pi = \pi \tan(\pi(x - (1))) + (-\pi)$

$|A| = \pi$ $B = \pi \rightarrow P = \frac{\pi}{|\pi|} = 1$ $h = +1$ $k = -\pi$

like
 $y = \pi \tan x$



40)



$(0.5, 0) \rightarrow h = +0.5, k = 0$

$2|A| = 2$
 $|A| = 1$

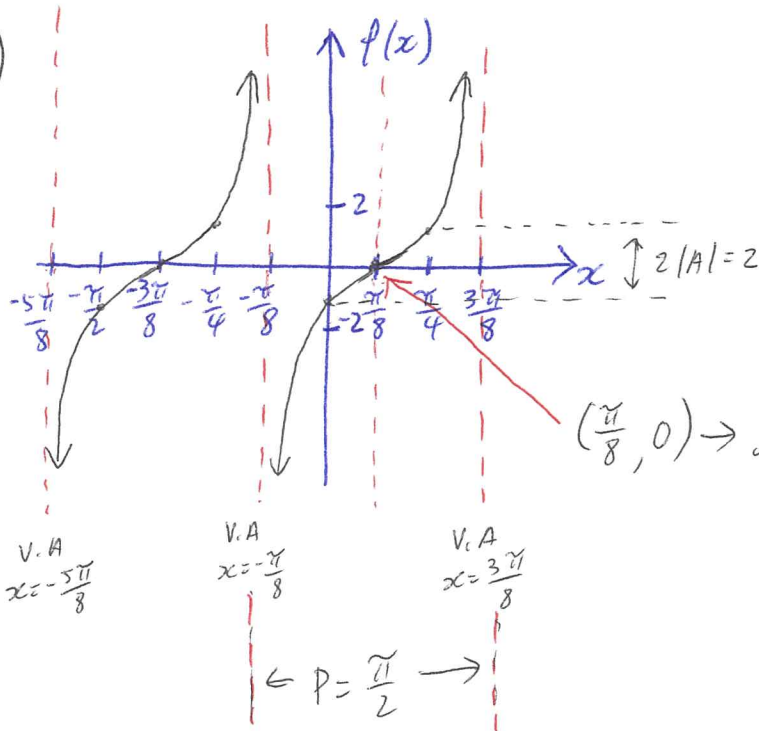
$P = 1$
 $\frac{\pi}{|B|} = 1$
 $\pi = |B| \rightarrow B = \pi$

like
 $y = -\tan x$

$f(x) = -(1) \tan(\pi(x - (0.5))) + (0)$

$f(x) = -\tan(\pi(x - 0.5))$

42)



$$2|A|=2$$

$$|A|=1$$

8.2 [5]

$$(\frac{\pi}{8}, 0) \rightarrow h = \frac{\pi}{8}, k = 0$$

$$p = \frac{\pi}{2}$$

$$\frac{\pi}{|B|} = \frac{\pi}{2}$$

$$|B|=2 \rightarrow B=2$$

like $y = \tan x$

$$f(x) = (1) \tan \left(2 \left(x - \left(\frac{\pi}{8} \right) \right) \right) + (0)$$

$$\underline{\underline{f(x) = \tan \left(2 \left(x - \frac{\pi}{8} \right) \right)}}$$