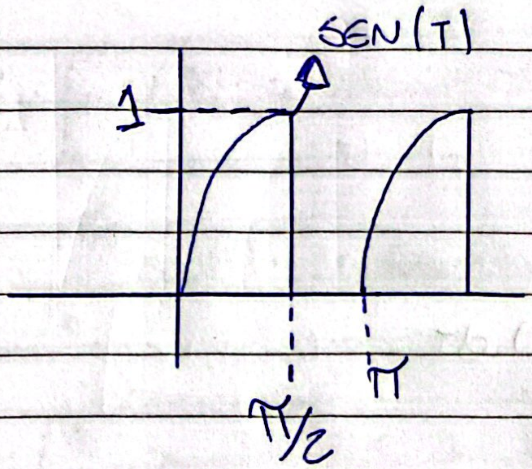

$$a_0 = \frac{1}{T}\int_0^{\pi} f(T)\,dT \Rightarrow a_0 = \frac{1}{\pi}\int_0^{\pi} \text{sen}(T)\cdot dT$$

$$a_0 = \frac{1}{\pi}\cdot\int_0^{\pi/2} \sin(T)\cdot dT + \cancel{\int_{\pi/2}^{\pi} \text{sen}(T)\cdot dT} = 0$$

$$a_0 = \frac{1}{\pi}\cdot\Big|_0^{\pi/2} -\cos(T) + \cancel{\Big|_{\pi/2}^{\pi} -\cos(T)} = 0$$

$$a_0 = \frac{1}{\pi}\cdot\Big|_0^{\pi/2} -\cos\left(\frac{\pi}{2}\right) - (-\cos(0)) + \frac{1}{\pi}\cancel{\Big|_{\pi/2}^{\pi} -\cos(\pi) - \left(-\cos\left(\frac{\pi}{2}\right)\right)} = 0$$

$$a_0 = \frac{1}{\pi}\cdot\Big|_0^{\pi/2} 0 \overset{+}{-}(-1) + \frac{1}{\pi}\cancel{\Big|_{\pi/2}^{\pi} \overset{+}{-}(-1) - 0} = 0$$

$$a_0 = \frac{1}{\pi}\cdot 1 + \cancel{\frac{1}{\pi}\cdot 1} = 0$$

$$a_0 = \frac{1}{\pi} \quad //$$

$$a_N = \frac{2}{\pi} \cdot \int_0^{\pi/2} \operatorname{sen}(t) \cdot \cos(N w_0 t) \cdot dt$$

$$a_N = \frac{\cancel{2}}{\pi} \cdot \int_0^{\frac{\pi}{2}} - \left[\frac{\cos(a-b)x}{\cancel{2} \cdot (a-b)} + \frac{\cos(a+b)x}{\cancel{2} \cdot (a+b)} \right]$$

$$a_N = \frac{1}{\pi} \cdot - \left[\frac{\cos\left(\frac{\pi - 2N\pi}{2}\right)}{1-2N} + \frac{\cos\left(\frac{\pi + 2N\pi}{2}\right)}{1+2N} \right]$$

$$bn = \frac{2}{\pi} \cdot \int_0^{\pi/2} f(t) \cdot sen(n w_0 t) \cdot dt$$

$$bn = \frac{2}{\pi} \cdot \int_0^{\pi/2} sen(t) \cdot sen(n w_0 t) \cdot dt$$

$$bn = \frac{2}{\pi} \cdot \int_0^{\pi/2} \frac{sen\,(a-b)x}{2(a-b)} + \frac{\overset{sen}{\cancel{cos}}\,(a+b)x}{2(a+b)}$$

$$bn = \frac{1\,\cancel{2}}{\pi} \cdot \int_0^{\pi/2} \frac{sen((1-2n)\cdot t)}{\cancel{2}\cdot(1-2n)} + \frac{\overset{sen}{\cancel{cos}}((1+2n)\cdot t)}{\cancel{2}\cdot(1+2n)}$$

$$bn = \frac{1}{\pi} \cdot \cancel{\Big|_0^{\pi/2}} \left[\frac{sen\cdot\frac{(\pi-2n\pi)}{2}}{1-2n} + \frac{sen\cdot\frac{(\pi+2n\pi)}{2}}{1+2n} \right]$$