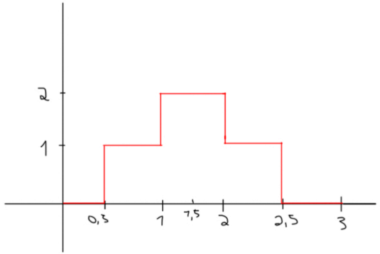

Onda par → $b_n = 0$

$T = 3s$

$f = \frac{1}{3}\,Hz$

$w_0 = \frac{2\pi}{3}$

$$a_0 = \frac{1}{3}\cdot\left[2\cdot\int_{0,5}^{1} 1\,dt + \int_{1}^{2} 2\,dt\right] \rightarrow a_0 = \frac{1}{3}\cdot\left[2\cdot[t]_{0,5}^{1} + 2\cdot[t]_{1}^{2}\right] \rightarrow a_0 = \frac{1}{3}\left[2\cdot\left(1-\frac{1}{2}\right) + 2\cdot(2-1)\right] \therefore \boxed{a_0 = 1}$$

$$a_n = \frac{2}{3}\left[2\int_{0,5}^{1} 1\cos(nw_0t)\,dt + \int_{1}^{2} 2\cos(nw_0t)\,dt\right] \rightarrow a_n = \frac{2}{3}\cdot\left[\frac{2}{nw_0}\cdot\left[sen(nw_0t)\right]_{0,5}^{1} + \frac{2}{nw_0}\cdot\left[sen(nw_0t)\right]_{1}^{2}\right] = \frac{2\cdot\cancel{2}}{\cancel{3}\cdot\frac{\cancel{2}\pi\cdot n}{\cancel{3}}} = \frac{2}{n\pi}$$

$$a_n = \frac{2}{n\pi}\cdot\left[\left(sen\left(\frac{2\pi n}{3}\right) - sen\left(\frac{2\pi n}{3}\cdot\frac{1}{2}\right)\right) - \left(sen\left(\frac{2\pi n}{3}\right) - sen\left(\frac{2\cdot 2\pi n}{3}\right)\right)\right] \rightarrow a_n = \frac{2}{n\pi}\left(\cancel{sen\left(\frac{2n\pi}{3}\right)} - sen\left(\frac{n\pi}{3}\right) - \cancel{sen\left(\frac{2n\pi}{3}\right)} + sen\left(\frac{4n\pi}{3}\right)\right) \therefore \boxed{a_n = \frac{2}{n\pi}\cdot\left(sen\left(\frac{4n\pi}{3}\right) - sen\left(\frac{n\pi}{3}\right)\right)}$$

$$\boxed{f(t) = 1 + \sum_{n=1}^{\infty}\frac{2}{n\pi}\cdot\left(sen\left(\frac{4n\pi}{3}\right) - sen\left(\frac{n\pi}{3}\right)\right)\cdot\cos\left(\frac{2\pi n t}{3}\right)}$$