1) $L=96 \qquad A=95^2$

a.1 de $f(-t)$ $\qquad T=\frac{L}{2}=\frac{96}{2}=48$

$$a_n=\frac{2}{48}\int_0^{48} mt\cos\left(\frac{2\pi}{48}5t\right)dt \qquad m=\frac{9025}{48}$$

$$a_n=\frac{9025}{1152}\int_0^{48} t\cos\left(\frac{2\pi}{48}1t\right)dt=0$$

$$a_n=\frac{9025\,\text{sen}(2\pi n)}{\pi n} = \text{Remplazando } n=1 \text{ da cero}$$

$$b_n=\frac{9025}{1152}\int_0^{48}\text{sen}\left(\frac{2\pi}{48}t\right)dt$$

$$b_n=\frac{9025\left(\text{sen}(2\pi n)-2\pi n\cos(2\pi n)\right)}{2\pi^2 n^2}$$

$n=1$

$$b_n=\frac{-9025}{\pi}$$

$$c_k=\frac{a_n-jb_n}{2}$$

$$=\frac{-j\left(\frac{-9025}{\pi}\right)}{2}$$

$$c_n=\frac{9025j}{2\pi}$$

$$=1436,373361\,j$$

2) $x[n] = 1 + \text{sen}(2/3\pi n) + \text{sen}(6\pi n + 1/4\pi) + 1\,\text{sen}(\pi/2)$

$$\frac{\left(e^{i\frac{2}{3}\pi n} - e^{i-\frac{2}{3}\pi n}\right)}{2i} + \frac{\left(e^{j6\pi n}\cdot e^{j-1/4\pi} - e^{j-6\pi n}\, e^{j\frac{1}{4}\pi}\right)}{2i}$$

$-9/2 = 0$

$-9 = -1/2j\ \text{EXP}(-J(1/4\pi))$

$1 = 1/2j$

$0 = 2$

$9/2 = 0$

$9 = 1/2j\ \text{EXP}(J(1/4\pi))$

$-1 = 1/-2j$

3) $x(t) = e^{2t}u(-t+b)$ $\quad a=3\ \ c=3\ \ m=3$ $\quad b=2\ \ d=8$ $\quad y(t) = x(t) \times h(t)$

$h(t) = cu(mt-d)$

$x(t) = e^{3t}\,u(-t+2) \quad h(t) = 3u(3t-8)$

$x(t) \rightarrow -\infty < t < 2$

$$\int_{-\infty}^{\infty} x(\tau)\cdot h(t-\tau)\,d\tau \Rightarrow \int_{-\infty}^{2} e^{3\tau}u(-t+\tau)\cdot 3u(3t-\tau-8)$$

$$= 1\int_{-\infty}^{2} e^{3t}\,dt$$

$$= 3e^{\infty-2} = \boxed{e^6} \quad t \to -\infty$$

$= 403{,}4287935$

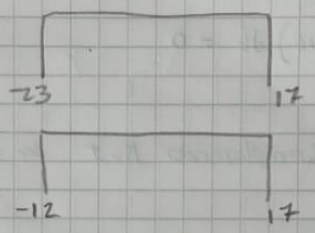
4) $x[n] = n(u[n+a] - u[n-b])$

$h[n] = \frac{24}{18}(u[-n] - u[-n+c])$

$a = 23 \quad c = 13$

$b = 18$

$y[n] = x[n] \cdot h[n] \qquad y[n] = 0$



$n < -35$

$n > 17$