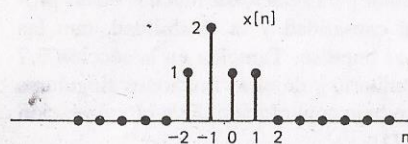
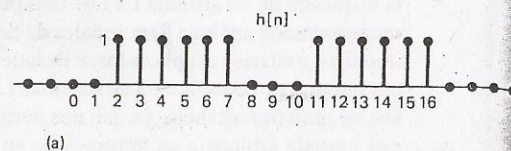
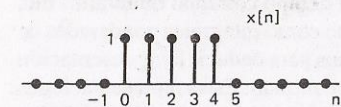
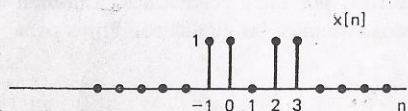
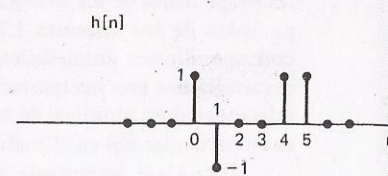


(j)  $x[n] = \left(\frac{1}{2}\right)^n u[n-4]$

$h[n] = 4^n u[2-n]$



(b)



(c)

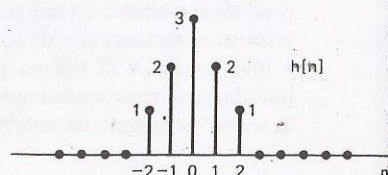


Figura P3.1

3.2. Para cada uno de los siguientes pares de formas de onda, utilice la integral de convolución para encontrar la respuesta  $y(t)$  a la entrada  $x(t)$  del sistema LTI cuya respuesta al impulso es  $h(t)$ . Dibuje sus resultados.

(a)  $x(t) = e^{-\alpha t} u(t)$  (Obtenga el resultado cuando  $\alpha \neq \beta$  y cuando  $\alpha = \beta$ .)

$h(t) = e^{-\beta t} u(t)$

(b)  $x(t) = u(t) - 2u(t-2) + u(t-5)$

$h(t) = e^{2t} u(1-t)$

(c)  $x(t) = e^{-3t} u(t)$

$h(t) = u(t-1)$

(d)  $x(t) = e^{-2t} u(t+2) + e^{3t} u(-t+2)$

$h(t) = e^t u(t-1)$

(e)  $x(t) = \begin{cases} e^t, & t < 0 \\ e^{5t} - 2e^{-t}, & t > 0 \end{cases}$

$h(t)$  dada en la figura P3.2(a)

(f)  $x(t)$  y  $h(t)$  dadas en la figura P3.2(b)

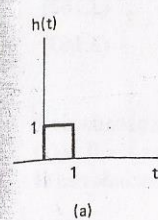
(g)  $x(t)$  dada en la figura P3.2(c).

$h(t) = u(-2-t)$

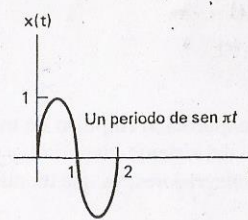
(h)  $x(t) = \delta(t) - 2\delta(t-1) + \delta(t-2)$ , y  $h(t)$  dada en la figura P3.2(d).

(i)  $x(t)$  y  $h(t)$  dadas en la figura P3.2(e).

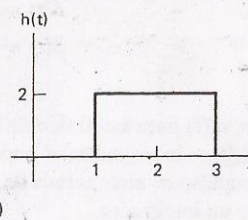
(j)  $x(t)$  y  $h(t)$  dadas en la figura P3.2(f).



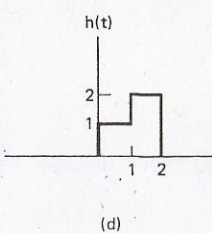
(a)



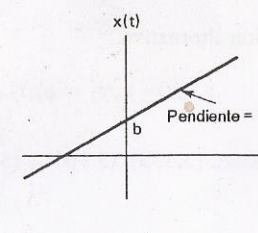
(b)



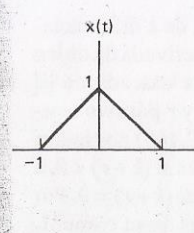
(c)



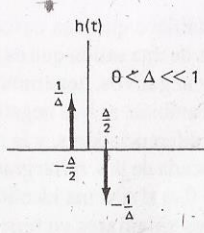
(d)



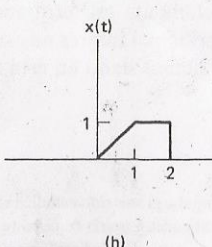
(e)



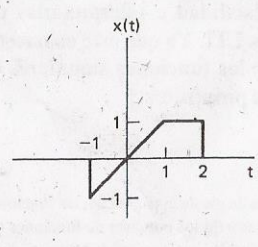
(f)



(g)



(h)



(i)

Figura P3.2