1. For each of the periodic waveforms below, all having period $T_0 = 2$ sec., formula. In each case, x(t) = 0 for all time t outside the interval $-1 \le t \le 1$ sec. Simplify if possible. $x(t) = e^{-t}$, $0 \le t < 1$; x(t) = 0, $1 \le t < 2$

(b)
$$x(t) = e^{-t}, 0 \le t \le 1; x(t) = -e^{-t}, 1 \le t \le 2$$

(b)
$$x(t) = e^t$$
, $0 \le t \le 1$, $x(t) = -e^t$, $1 \le t \le 2$
(c) $x(t) = e^t - 1$, $0 \le t < 1$; $x(t) = 0$, $1 \le t < 2$

(c)
$$x(t) = e - 1$$
, $0 \le t < 1$, $x(t) = 0$, $1 \le t < 2$

= = 1 [e (-1-jkr.)+ dt = 1]; e (-1-jkr.)+ dt

(d)
$$x(t) = 1$$
, $0 \le t < 0.5$; $x(t) = 0.5$, $0.5 \le t < 1$; $x(t) = 0$, $1 \le t < 2$

(b)
$$x(t) = e^{at}, -1 \le t$$

$$x(t) = e^{2t}, -1 \le t \le 0; x(t) = e^{-2t}, 0 \le t \le 1$$

$$x(t) = e^{-t}, -1 \le t \le 0; \ x(t) = e^{-t}, \ 0 \le t \le 1$$

$$x(t) = \cosh(t) = \frac{1}{2}(e^{t} + e^{-t}), -1 \le t \le 1$$

$$x(t) = \cos(t) = \frac{-(e^{-t}e^{-t})}{2}, -1 \le t \le 1$$

d)
$$x(t) = 0.5, -1 \le t \le -0.5$$
 and $0.5 \le t \le -0.5$

$$x(t) = \cos n(t) = \frac{1}{2}(e^{t} + e^{t}), \quad -1 \le t \le 1$$

(b) Ck= + [[X(t) e] kmot oft

= P2(1-j+2)-20-1/1 +1

(d) Ck= + fr xit) e-jkmt dt

 $= \frac{-e^{-jk\bar{x}} - e^{-ijk\bar{x}} + 1}{4jk\bar{x}}$

$$= \frac{1}{2} \int_{0}^{1} e^{-t} e^{-jk\frac{\pi}{2}t} dt + \frac{1}{2} \int_{0}^{1} -e^{-t} e^{-jk\pi t}$$

= - 1/2(1+j/k) . 6 -1-jky) , + 2(1+j/k) 6 -1-jky);

 $=\frac{1}{2}\int_{a}^{a.s}e^{-jk\pi t}dt+\frac{1}{2}\int_{a.s}^{s}\frac{1}{2}e^{-jk\pi t}dt$

 $= -\frac{1}{2jk\bar{k}} e^{-jk\bar{k}t} \Big]_{0}^{0.5} - \frac{1}{4jk\bar{k}} e^{-jk\bar{k}t} \Big]_{0.5}^{1}$

= - 2/km (e + 1/km -1) - 4/km (e 1/km - 6 - 1/km)

= - = 1 ((+j/2) (6 -1-j/2) + = 1 (+j/2) [6 -1-j/2) [6 -1-j/2)

$$x(t) = 0.5, -1 \le t < -0.5$$
 and $0.5 \le t \le 1$; $x(t) = 1, -0.5 \le t < 0.5$

(b) / (w) = 1 x(t). e-jut dt

(d) H(w)= 100 xxt). e-jut dt

$$x(t) = 0.5, -1 \le t < -0.5 \text{ and } 0.5 \le t \le t$$

$$x(t) = 0.5, -1 \le t < -0.5$$
 and 0.5

$$x(t) = 0.5, -1 \le t < -0.5$$
 and $0.5 \le$

$$x(t) = 0.5, -1 \le t < -0.5$$
 and 0.5

$$x(t) = \cosh(t) = \frac{1}{2}(e^t + e^{-t}), -1 \le t \le 1$$

$$x(t) = e^{2t}, -1 \le t \le 0; x(t)$$

 $x(t) = \cosh(t) = \frac{1}{2}(e^t + e^t)$

$$x(t) = e^{st}, -1 \le t \le 0; x(t)$$

 $x(t) = \cosh(t) = \frac{1}{2}(e^t + e^{-t})$

$$0 = e^{2t}, -1 \le t \le 0; \ x(t) = e^{-2t}, \ 0 \le t \le 0$$

$$f(t) = \cos\left(\frac{\pi}{2}t\right) = \frac{1}{2}(e^{J\frac{-2}{2}t} + e^{-J\frac{-2}{2}t}), -1 \le t$$

$$x(t) = \cos\left(\frac{\pi}{2}t\right) = \frac{1}{2}\left(e^{j\frac{\pi}{2}t} + e^{-j\frac{\pi}{2}t}\right), -1 \le t \le 1$$

$$f(t) = \cos\left(\frac{\pi}{2} t\right) = \frac{1}{2} \left(e^{j\frac{\pi}{2}t} + e^{-j\frac{\pi}{2}t}\right), -1 \le t$$

$$t) = \cos\left(\frac{\pi}{2}t\right) = \frac{1}{2}\left(e^{j\frac{\pi}{2}t} + e^{-j\frac{\pi}{2}t}\right), -1 \le t$$

that of the of the aperiodic pures signals shown, find the Foliala. In each case,
$$x(t) = 0$$
 for all time t outside the interval

For each of the of the aperiodic pulse signals shown, find the Fourier transform by using the i formula. In each case,
$$x(t) = 0$$
 for all time t outside the interval $-1 \le t \le 1$ sec. Simplify if positive in the contract of the state of the contract o

For each of the of the aperiodic pulse signals shown, find the Fourier transform by using the i formula. In each case,
$$x(t) = 0$$
 for all time t outside the interval $-1 \le t \le 1$ sec. Simplify if pulse is the contract of the contract o

 $= \int_{-1}^{0} e^{2t} e^{-j\omega t} dt + \int_{0}^{t} e^{-2t} e^{-j\omega t} dt$

= \int_{-1}^{0} e^{(2-jm)t} dt + \int_{-1}^{0} e^{(-2-jm)t} dt

 $= \frac{1}{2-jw} e^{(1-jw)t} \Big]_{1}^{2} - \frac{1}{2+jw} e^{(-2-jw)t} \Big]_{1}^{2}$

 $= \frac{1}{2-\mu}(|-e^{jw^{-1}}) - \frac{1}{2+\mu}(e^{-2-jw^{-1}})$

= [0.20 30 dk+ [0.2 e - hat dk+] 0.20 e - hat dk

 $= \frac{-5 \ln 6}{100} \left[-\frac{1}{100} \right]^{-1} - \frac{1}{100} \left[-\frac{1}{100} \right]^{-1} = \frac{5 \ln 6}{100} \left[-\frac{1}{100} \right]^{1/2}$

 $=-\frac{1}{2}\sum_{i}(e_{i,j}-e_{j,i})-\frac{1}{2}(e_{-\frac{2}{2}j}-e_{\frac{2}{2}j})-\frac{1}{2}(e_{-\frac{2}{2}j}-e_{\frac{2}{2}j})$