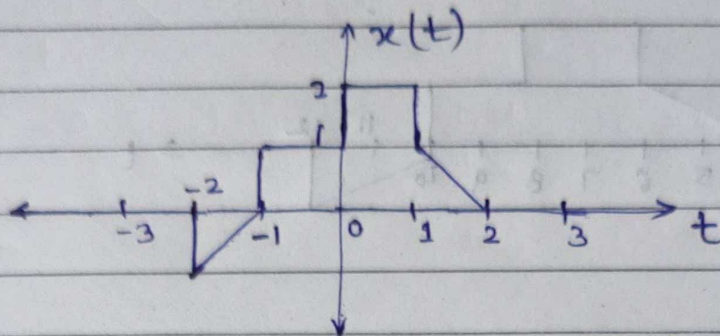


Quiz-1

Solutions.

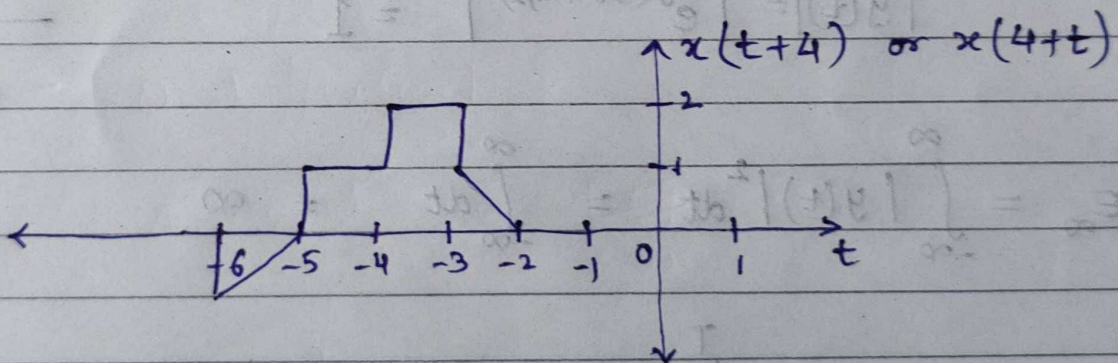
Ques 1)



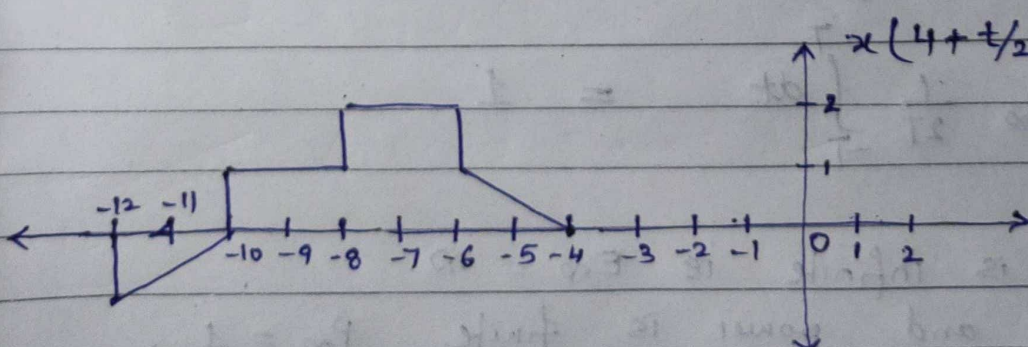
We need to plot $x(4 - t/2)$. For this the sequence of operations we will follow are as:-

- (a) Time shifting : leading to signal $x(t+4)$ or $x(4+t)$
- (b) Time scaling : leading to signal $x(4+t/2)$
- (c) Time inversion : leading to signal $x(4-t/2)$

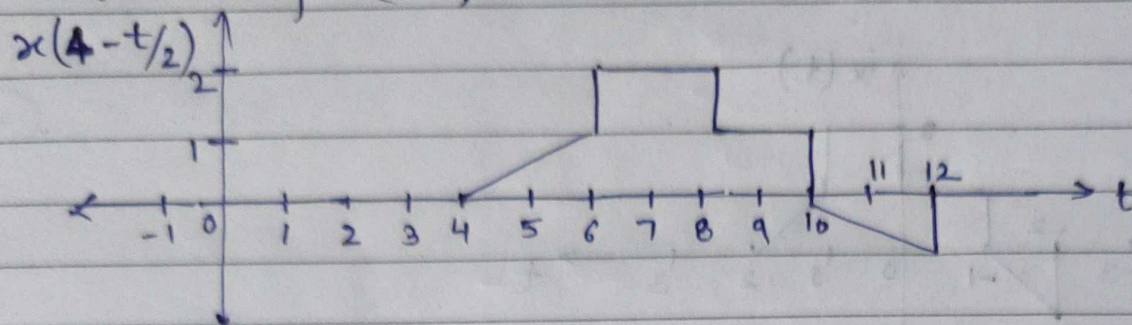
After step (a) we have —



After step (b) we'll have —



After step (c), we have —



Ques 2: $y(t) = e^{j(3t + \pi/2)}$

we need to compute energy and power of the above signal.

we know that

$$|y(t)| = |e^{j(3t + \pi/2)}| = 1 \quad \text{--- (1)}$$

$$E_{\infty} = \int_{-\infty}^{\infty} |y(t)|^2 dt = \int_{-\infty}^{\infty} dt = \infty$$

$$P_{\infty} = \lim_{T \rightarrow \infty} \frac{1}{2T} \int_{-T}^T |y(t)|^2 dt$$

$$= \lim_{T \rightarrow \infty} \frac{1}{2T} \int_{-T}^T dt = 1$$

∴ Energy is infinite i.e. $E_{\infty} = \infty$
and power is finite $P_{\infty} = 1$.
The signal $y(t)$ is a power signal.