

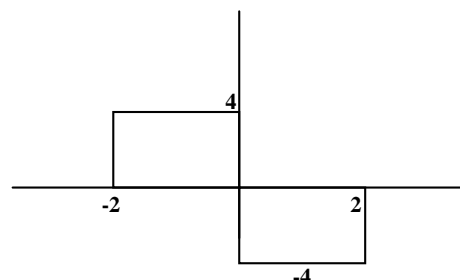
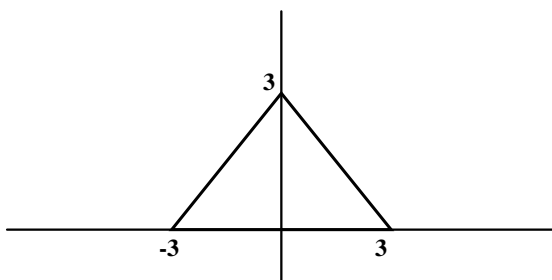
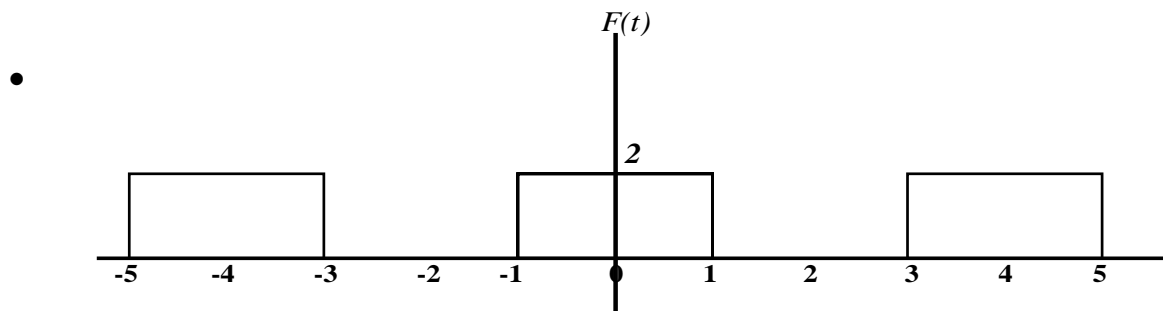
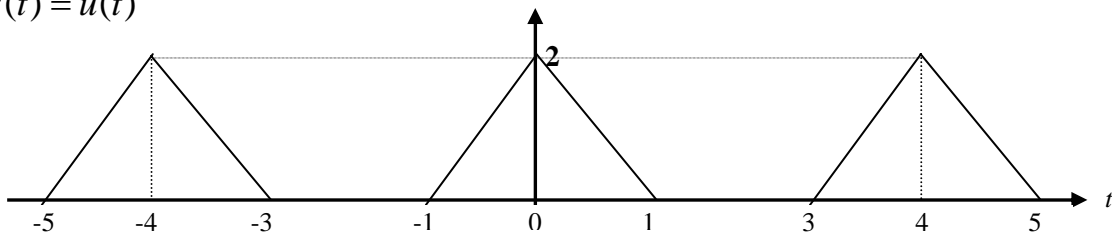


Sheet (1)

Classification of Signals-Orthogonality

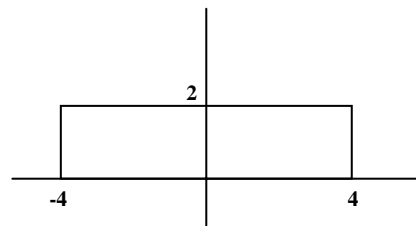
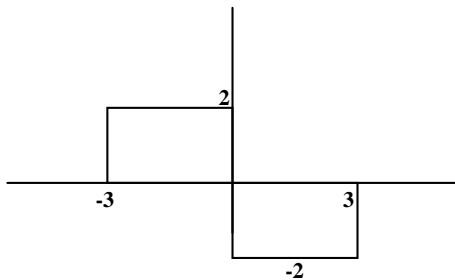
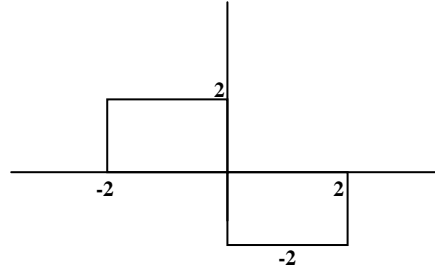
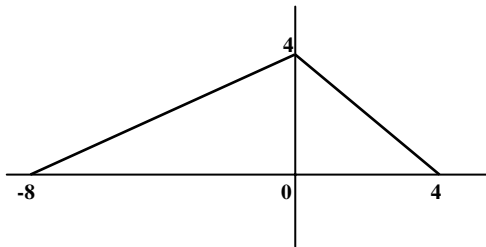
1- Classify the following signal as power or energy signal and find its value?

- $g(t) = A\sin(2t)$
- $g(t) = A[u(t+a) - u(t-a)]$
- $g(t) = A.e^{-t}$
- $g(t) = A.e^t u(-t)$
- $g(t) = |t|$
- $g(t) = A.e^{-2|t|}$
- $g(t) = u(t)$



2- Check the orthogonality between the following functions:

- $g_1(t) = A \cos(2\pi t)$ $g_2(t) = e^{j4\pi t}$
- $g_1(t) = A.e^{-2t}u(t)$ $g_2(t) = A.e^{3t}u(-t)$



3- Check the orthogonality between $g_1(t)$, $g_2(t)$ and $g_3(t)$ and then Represent the following signals using the orthonormal functions:

