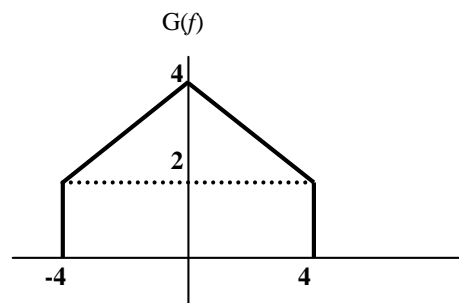
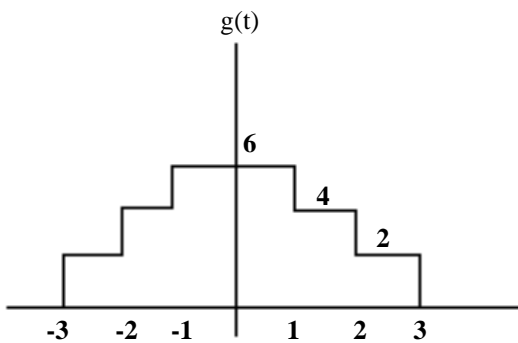
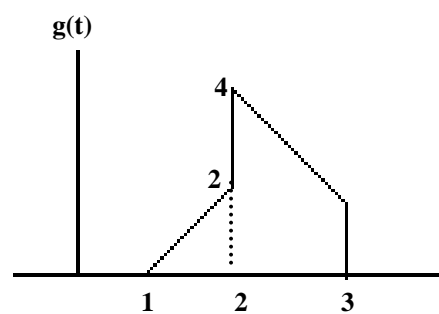
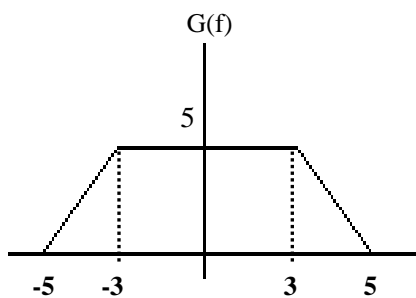




*Sheet (5)*

**Properties of Fourier Transform (2)**

1- Evaluate the FT of the shown signals using differentiation property:



2- Find and sketch the spectrum of each signals:

$$g(t) = A \cdot \text{tri}\left(\frac{t + \tau}{2\tau}\right) \cdot u(t + \tau)$$

$$g(t) = |t|$$

$$g(t) = t \cdot e^{-t/\tau} \cdot u(t)$$

$$g(t) = \frac{1 - jt}{1 + jt}$$

$$g(t) = 6 \cdot \text{rect}\left(\frac{t}{20}\right) \cdot \text{sgn}(t)$$

3- Find the IFT the following signals and sketch its fourier transform:

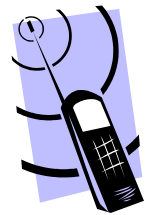
$$G(f) = \frac{d}{df} \cdot e^{-2|f|}$$

$$G(f) = (f - 3) \cdot [u(f - 1) - u(f - 3)]$$

$$G(f) = \frac{1 + jf}{1 + \omega^2}$$

4- Obtain the Fourier Tranfrom of the following waveform using There methods:

$$g(t) = \begin{cases} 5t + 10 & -2 \leq t \leq -1 \\ 5 & -1 \leq t \leq +1 \\ -5t + 10 & +1 \leq t \leq 2 \end{cases}$$



*Good Luck*