BLG354E – Homework 2

1.   Determine the Fourier Series coefficients for each of the following DT signals, which are periodic in $N = 8$.
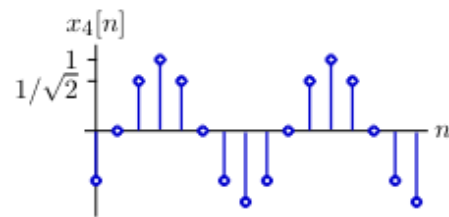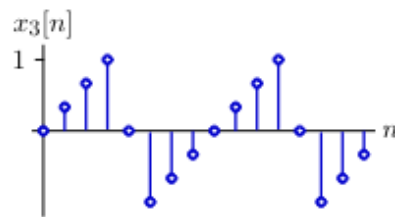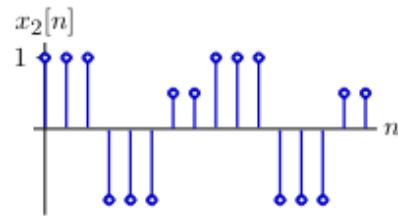
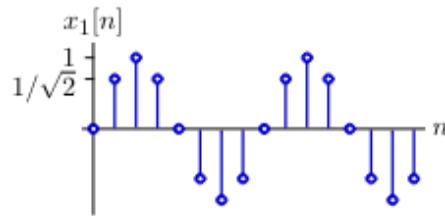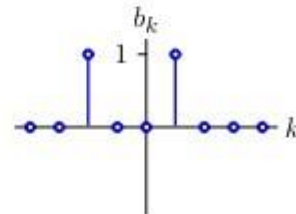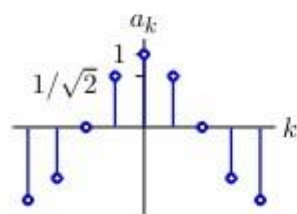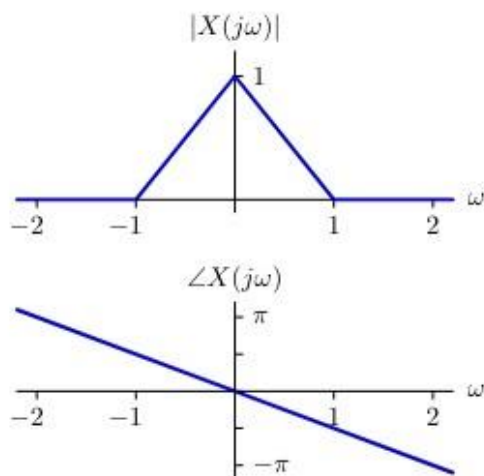**2.**   Determine the DT signals with the following Fourier series coefficients. Assume that the signals are periodic in $N = 8$.

3. The magnitude and angle of the Fourier transform of a signal $x(t)$ are given in the following plots.

Five signals are derived from $x(t)$ as shown in the left column of the following table. Six magnitude plots (M1-M6) and six angle plots (A1-A6) are shown on the next page. Determine which of these plots is associated with each of the derived signals and place the appropriate label (e.g., M1 or A3) in the following table. Note that more than one derived signal could have the same magnitude or angle.

signal	magnitude	angle
$\dfrac{dx(t)}{dt}$		
$(x * x)(t)$		
$x\left(t - \dfrac{\pi}{2}\right)$		
$x(2t)$		
$x^2(t)$		

3. Cont:

M1

A1

M2

A2

M3

A3

M4

A4

M5

A5

M6

A6