Fall 2018 - Quiz 4
ECE 301: Signals and Systems

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Problem 1

Let $x[n]$ be a discrete periodic signal with fundamental period N equal to 30. The discrete Fourier Series coefficients of $x[n]$ are a_k as given :

$$a_k = \begin{cases} 1, -14 \le k \le -10 \\ 2, -9 \le k \le -5 \\ 3, -4 \le k \le 0 \\ -2, 1 \le k \le 5 \\ -1, 6 \le k \le 10 \end{cases}$$

a Find $\sum\limits_{n=30}^{90} x[n]$.

b Calculate the average power of the signal.

c Find $x[126]$.

d Find $x[-30] + x[37]$.

e Calculate Fourier Series Coefficients of $x[n+15]$.