$x(n) = \{-2, 3, -5, 1, 1, 2, 3, -8\}$

WRT: $X(K) = \sum_{n=0}^{N-1} x(n) W_N^{nK}$ $\quad N = 8$

$\therefore X(K) = \sum_{n=0}^{7} x(n) W_8^{nK}$

$X(K) = x(0) + x(1) W_8^{K} + x(2) W_8^{2K} + x(3) W_8^{3K} + x(4) W_8^{4K}$

$+ x(5) W_8^{5(K)} + x(6) W_8^{6K} + x(7) W_8^{7K}$

$X(0) = -2+3-5+1+1+2+3-8 = -5$

$W_8^0 = 1 \quad W_8^1 = 0.707 - 0.707j \quad W_8^2 = -1j \quad W_8^3 = -0.707 - 0.707j$

$W_8^4 = -1 \quad W_8^5 = -0.707 + 0.707j \quad W_8^6 = 1j \quad W_8^7 = 0.707 + 0.707j$

$X(1) = -2 + 3W_8^1 - 5W_8^2 + W_8^3 + W_8^4 + 2W_8^5 + 3W_8^6 - 8W_8^7 = -8.65 + 0.928j$

$X(2) = -2 + 3W_8^2 - 5W_8^4 + 1W_8^6 + W_8^0 + 2W_8^2 + 3W_8^4 - 8W_8^6 = 1 - 12j$

$X(3) = -2 + 3W_8^3 - 5W_8^6 + 1W_8^9 + 1W_8^{12} + 2W_8^{15} + 3W_8^{18} - 8W_8^{21} = 2.65 - 15.07j$

$X(4) = -2 + 3W_8^4 - 5W_8^8 + W_8^{12} + W_8^{16} + 2W_8^{20} + 3W_8^{24} - 8W_8^{28} = -1$

$X(5) = X^*(3) = 2.65 + 15.07j$

$X(6) = X^*(2) = 1 + 12j$

$X(7) = X^*(1) = -8.65 - 0.928j$

$X(K) = -5, (-0.707 - 0.707j), 0.707$