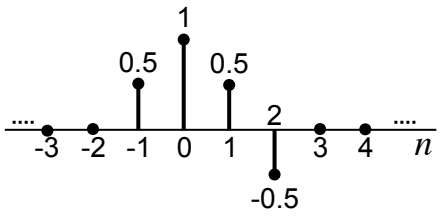
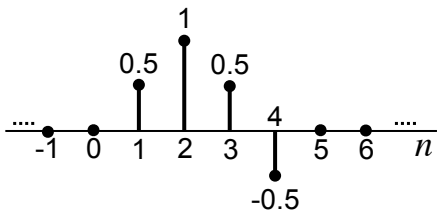
Solutions to EE3210 Quiz 1 Problems

Problem 1:

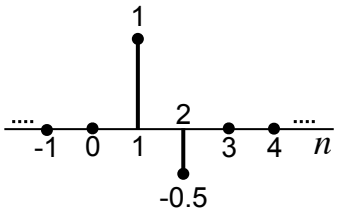
(a) The signal $x[-n]$ can be obtained from $x[n]$ through time reversal as:



(b) Letting $y[n] = x[-n]$, the signal $x[2-n]$ can be obtained from $y[n]$ through time shift, i.e., $x[2-n] = y[n-2]$, as:



(c) Letting $z[n] = x[2-n]$, the signal $x[2-2n]$ can be obtained from $z[n]$ through time scaling, i.e., $x[2-2n] = z[2n]$, as:



Problem 2: If $x[n]$ is an odd signal, by definition, we must have $x[n] + x[-n] = 0$ for all n. Then, given $x[0] + x[-0] = 0$, we must have $x[0] = 0$.