**EXPERIMENT 9 Difference Equations**

**DATE:**

1. Write a program to plot unit impulse response and unit step response for the DT LTI systems described by their constant coefficient difference equation. Assume all LTI systems are initially relaxed (i.e. causal). Verify theoretically.
2. *y*(*n*) - ⅓ *y*(*n* – 1) = *x*(*n*)
3. *y*(*n*) – 0.75 *y*(*n* – 1) + 0.125 *y*(*n* – 2)= *x*(*n*)
4. *y*(*n*) – 0.7 *y*(*n* – 1) + 0.1 *y*(*n* – 2) = 2 *x*(*n*) – *x*(*n* – 2)
5. *y*(*n*) – 0.7 *y*(*n* – 1) + 0.12 *y*(*n* – 2) = *x*(*n* – 1) + *x*(*n* – 2)