Fayoum University
Faculty of Computers & Information
Second Year
Digital Signal Processing
Year 2020 / 2021

Sheet 1

- 1- Sketch each of the following special digital sequences:
- (a) $5\delta(n)$
- (b) $-2\delta(n-5)$
- (c) -5u(n)
- (d) 5u(n-2)
- 2- Calculate the first eight sample values and sketch each of the following sequences:
- (a) $x(n)=0.5^{n}u(n)$
- (b) $x(n)=5\sin(0.2\pi n)u(n)$
- 3- Sketch the following sequences:
- (a) $x(n)=2\delta(n+3)-0.5\delta(n+1)-5\delta(n-2)-4\delta(n-5)$
- (b) $x(n)=2\delta(n+2)-2\delta(n+1)+5u(n-3)$
- 4- A discrete-time signal x[n] is defined as

$$x[n] = \begin{bmatrix} 2 & 0 & 3 & 1 & 1 & -1 \end{bmatrix}$$

Sketch the following:

- a) x[n-2]
- b) x[n/2]
- e) x[-2n+3]
- d) $3x[n-2]\delta[n-4]$
- e) x[n]u[2-n]
- f) $x[n^2]$