

## Digital Signal Processing Assignment # 2

1. Find the convolution of the following signals.

(a)  $x(n) = \left(\frac{1}{2}\right)^n u(n)$ ,  $h(n) = \delta(n - 1) + \left(\frac{1}{2}\right)^n u(n)$

(b)  $x(n) = nu(n)$ ,  $h(n) = u(n) - u(n - 10)$ .

(c)  $x(n) = [1, -2, \underset{\uparrow}{4}, -8, 16]$ ,  $h(n) = [\underset{\uparrow}{1}, -1, 1, -1]$

(d)  $x(n) = [1, 2, \underset{\uparrow}{3}, 0, -1]$ ,  $h(n) = [2, \underset{\uparrow}{-1}, 3, 1, -2]$ .