

32b)

$$x[n] = [1, 0, 0, 0, 1]$$

$$y[n] = [1, 1, 1, 0, 0, 0]$$

$$x[n] * y[n] = \sum_k x[k] y[n-k] = h[n]$$

Since  $x[n] = 1$  @  $n=0, 4$  those are the only  $k$  values needed

$$h[0] = x[0] \cdot y[0-0] + x[4] \cdot y[0-4]$$

$$h[0] = 1 \cdot 1 + 1 \cdot 0 = 1$$

$$h[1] = 1 \cdot y[1-0] + 1 \cdot y[1-4]$$

$$h[1] = 1 \cdot 1 + 1 \cdot 0 = 1$$

$$h[2] = y[2] + y[-2] = 1$$

$$h[3] = y[3] + y[-1] = 0$$

$$h[4] = y[4] + y[0] = 1$$

$$h[5] = y[5] + y[1] = 1$$

$$h[6] = y[6] + y[2] = 1$$

$$h[7] = y[7] + y[3] = 0$$

$$x[n] * y[n] = [\dots, \underset{\uparrow}{1}, 1, 1, 0, 1, 1, 1, 0, \dots]$$