Q1)

$$h[n] = 2\delta[n] + 3\delta[n-1] - h[n-2]$$

~~A+B~~

$$h[n] = (A j^n + B(-j)^n)\, u[n]$$

at $n = 0$

$$A + B = 2 \quad \text{---} (1)$$

at $n = 1$

$$A - jB = 3 \quad \text{---} (2)$$

at $n = 2$

$$A - B = -h[0]$$

$$= -(A+B)$$

$$jA + jB = j2$$

$$A - jB = 3$$

$$(j+1)A = 3 + 2j$$

$$A = \frac{3+2j}{1+j}$$

$$B = 2 - \left(\frac{3+2j}{1+j}\right)$$

$$B = \frac{2+2j-3-2j}{1+j} = -\frac{1}{1+j}$$

$$A = \frac{3+2j}{1+j} \qquad B = -\frac{1}{1+j}$$

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