EEE-521 Sinyaller ve Sistemler HW-IV

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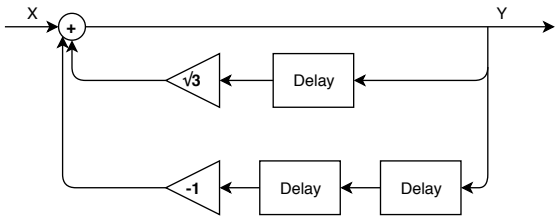
İsim ve Soyisim: _____

Numara: _____

1. Aşağıda verilen blok diyagrama göre sistemin kutupları aşağıdakilerden hangisidir?



A. $p_0 = e^{j \cdot \frac{\pi}{2}}$ ve $p_1 = e^{-j \cdot \frac{\pi}{2}}$

B. $p_0 = e^{j \cdot \frac{\pi}{6}}$ ve $p_1 = e^{-j \cdot \frac{\pi}{6}}$

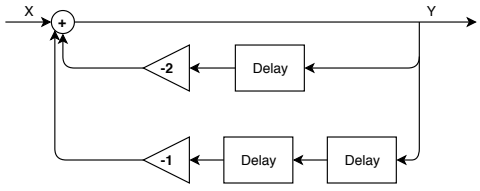
C. $p_0 = e^{j \cdot \frac{\pi}{3}}$ ve $p_1 = e^{-j \cdot \frac{\pi}{3}}$

D. $p_0 = e^{j \cdot \pi}$ ve $p_1 = e^{-j \cdot \pi}$

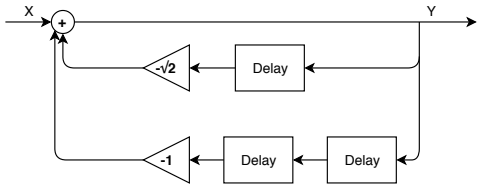
E. $p_0 = e^{j \cdot \frac{\pi}{4}}$ ve $p_1 = e^{-j \cdot \frac{\pi}{4}}$

2. Kutupları $p_0 = e^{j \cdot \frac{\pi}{4}}$ ve $p_1 = e^{-j \cdot \frac{\pi}{4}}$ olan sistemin blok diyagramı aşağıdakilerden hangisidir?

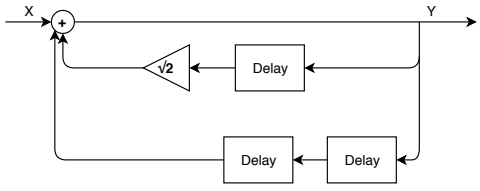
(A)



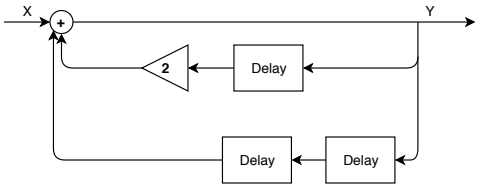
(B)



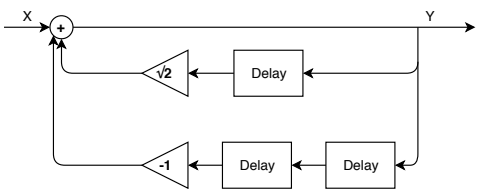
(C)



(D)



(E)



3. $x[n] = \delta[n]$ ve $y[n] = 3 \cdot x[n] - \frac{2}{5} \cdot y]n-1] + 7 \cdot y[n-2]$ olan bir sistemin impulse-response'ın z transformu alınmış hali olan H(z) aşağıdakilerden hangisidir?

A. $H(z) = \frac{3 \cdot z^2}{5 \cdot z^2 + 2 \cdot z - 35}$

B. $H(z) = \frac{3 \cdot z^2}{z^2 + 2 \cdot z - 7}$

C. $H(z) = \frac{15 \cdot z^2}{5 \cdot z^2 + 2 \cdot z - 35}$

D. $H(z) = \frac{3 \cdot z^2}{z^2 - 2 \cdot z - 7}$

E. $H(z) = \frac{15 \cdot z^2}{z^2 + 2 \cdot z - 7}$

4. $H(z) = \frac{36 \cdot z^2}{3 \cdot z^2 - 5 \cdot z + 2}$ olan bir sistemin $y[n]$ difference equation'ı aşağıdakilerden hangisidir?

A. $y[n] = 12 \cdot x[n] + \frac{5}{3} \cdot y[n-1] - \frac{2 \cdot y[n-2]}{3}$

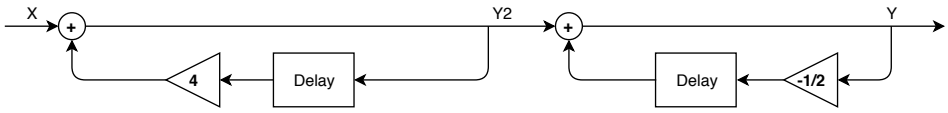
B. $y[n] = 12 \cdot x[n] + \frac{5}{3} \cdot y[n-1] + \frac{2 \cdot y[n-2]}{3}$

C. $y[n] = 12 \cdot x[n] - \frac{5}{3} \cdot y[n-1] + \frac{2 \cdot y[n-2]}{3}$

D. $y[n] = 12 \cdot x[n] + \frac{5}{3} \cdot y[n+1] - \frac{2 \cdot y[n-2]}{3}$

E. $y[n] = 12 \cdot x[n] + \frac{5}{3} \cdot y[n+1] - \frac{2 \cdot y[n+2]}{3}$

5. Aşağıda blok diyagrama göre sistemin impulse response'ının z-transform alınmış hali olan H(z) aşağıdakilerden hangisidir?



A. $H(z) = \frac{z^2}{2 \cdot z^2 + 4 \cdot z - 7}$

B. $H(z) = \frac{2 \cdot z^2}{2 \cdot z^2 - 7 \cdot z - 4}$

C. $H(z) = \frac{z^2}{4 \cdot z^2 - 4 \cdot z - 7}$

D. $H(z) = \frac{2 \cdot z^2}{2 \cdot z^2 - 7 \cdot z + 4}$

E. $H(z) = \frac{z^2}{2 \cdot z^2 - 4 \cdot z + 7}$