

Auditorne vježbe 6

Zadatak 6.1

Odrediti z transformaciju sljedećih sekvenci:

a) $x[n] = \{2, 4, 3, 0, 6, 0, 1, 2\}$

b) $x[n] = u[n]$

c) $x[n] = 0.2^{n-1}u[n-1] + 2 * 0.6^n u[-n-2]$

d) $x[n] = \left(\frac{1}{2}\right)^n u[n-3]$

e) $x[n] = (1+n) \left(\frac{1}{3}\right)^n u[n]$

f) $x[n] = n\left(\frac{1}{2}\right)^n u[n] + n\left(\frac{1}{2}\right)^{-n} u[-n-1]$

g) $x[n] = \left(\frac{1}{2}\right)^n u[n+2] + 3^n u[-n-1]$

h) $x[n] = \left(\frac{1}{2}\right)^n u[n] - 2^n u[-n-1]$

i) $x[n] = \left(\frac{1}{2}\right)^n u[n+3] + 3^{n-1} u[-n-2]$

j) $x[n] = 0.8^n u[n] + 3 * 0.4^n u[-n-1]$

Zadatak 6.2

Odrediti inverznu z transformaciju funkcije

a) $X(z) = \frac{1 + 3z^{-1}}{(1 + 3z^{-1} + 2z^{-2})}$

b) $X(z) = \frac{1 - \frac{1}{2}z^{-1}}{\left(\frac{1}{8} + \frac{3}{4}z^{-1} + z^{-2}\right)}$

c) $X(z) = \frac{5z}{(1 + z - 6z^2)}$

$$\text{d) } X(z) = \frac{1}{1 - z^{-1} + \frac{1}{2}z^{-2}}$$

$$\text{e) } X(z) = \frac{z^{-6} + z^{-7}}{(1 - z^{-1})}$$

$$\text{f) } X(z) = \frac{1 + 2z^{-2}}{(1 + z^{-2})}$$

$$\text{g) } X(z) = \frac{2 - 1.5z^{-1}}{(1 - 1.5z^{-1} + 0.5z^{-2})}$$

$$\text{h) } X(z) = \frac{1}{4} \frac{1 + 6z^{-1} + z^{-2}}{(1 - 2z^{-1} + 2z^{-2})(1 - \frac{1}{2}z^{-1})}$$