Izpit DOS 31-08-05

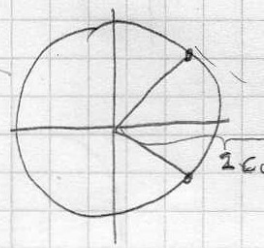
1. $e^{j\omega} = z$

$e^{-j\omega} = z^{-1}$

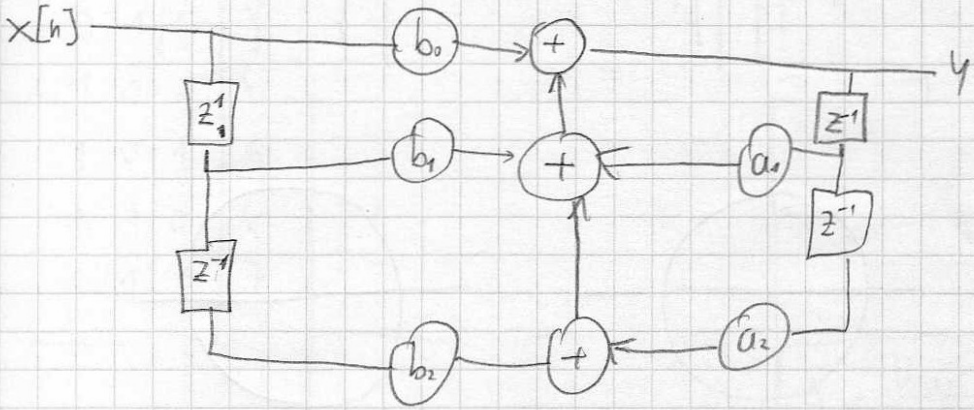
$\omega_0 = \frac{\pi}{4}$

$$H(z) = \frac{(1 - e^{j\frac{\pi}{4}} z^{-1})(1 - e^{-j\frac{\pi}{4}} \cdot z^{-1})}{(-//-) \cdot 0{,}9} =$$

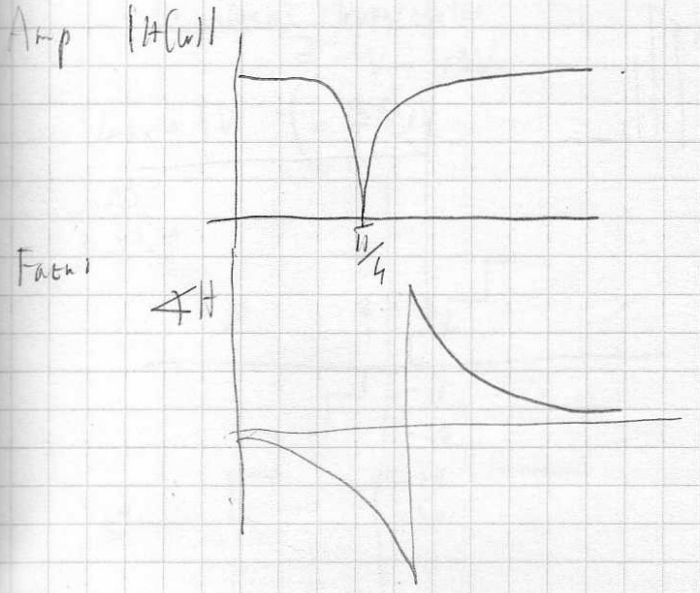
$$= \frac{1 - (e^{j\pi/4} + e^{-j\frac{\pi}{4}}) \cdot z^{-1} + z^{-2}}{} =$$



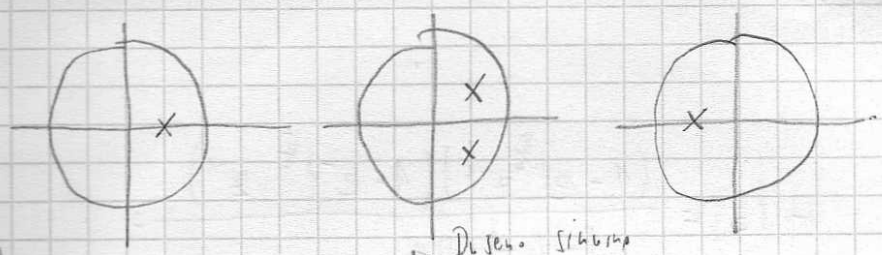
$$= \frac{\overbrace{1}^{b_0=1} - \overbrace{2\cos\frac{\pi}{4}}^{b_1} z^{-1} + \overbrace{1}^{b_2=1} z^{-2}}{\underbrace{1}_{a_0} - \underbrace{1{,}8\cos\frac{\pi}{4}}_{a_1} z^{-1} + \underbrace{0{,}81}_{a_2} z^{-2}}$$

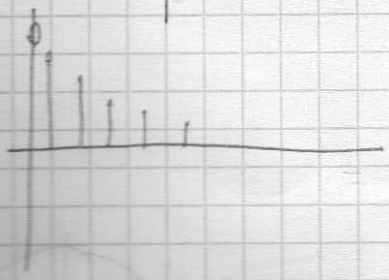


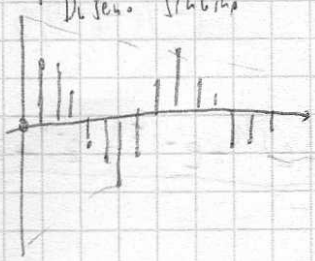
Filter z zarezo

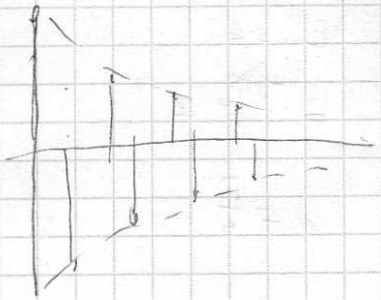


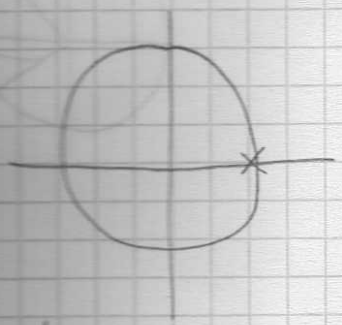
2.

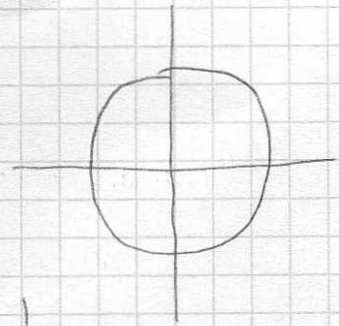


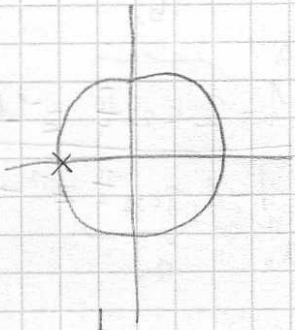


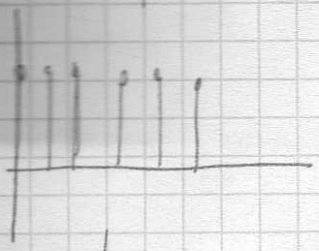


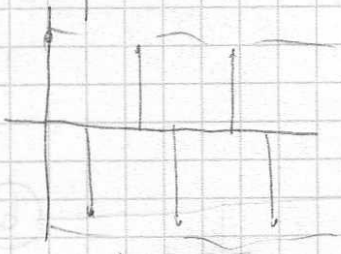


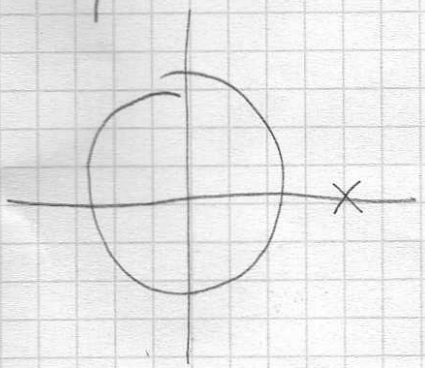


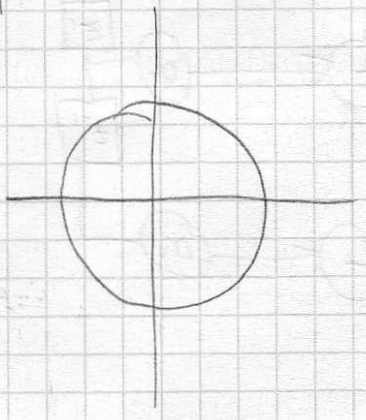


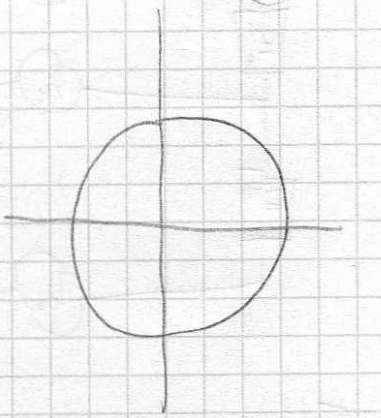


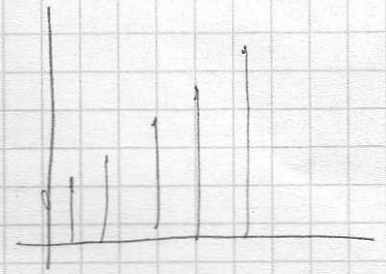


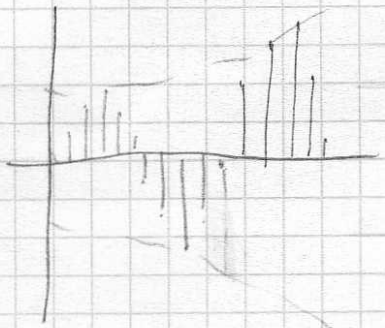


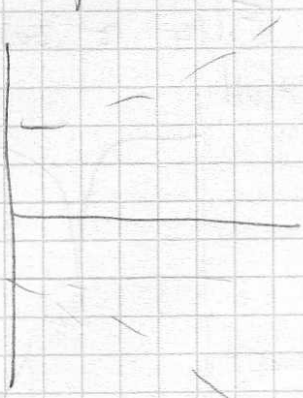










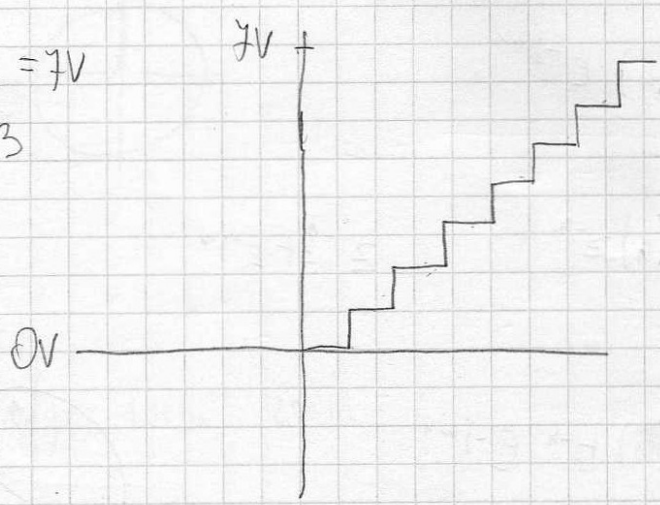


3.

$U_{min} = 0V$ — knjiga (skica A/D pretv.)

$U_{max} = 7V$

$b = 3$



Tabela

0 0 0	0
0 0 1	1
0 1 0	2
0 1 1	3
1 0 0	4
1 0 1	5
1 1 0	6
1 1 1	7

Število kvant. nivojev

$$N = 2^b = 8$$

$$\Delta = \frac{U_{max}}{N-1} = \frac{7}{7} = 1V$$

$$\Delta = \frac{U_{max}}{2^b} = \frac{4V}{4} = 1V$$

bipolarni

V knjigi

bipolarni kvantizator $= -4V \div +3V$

$U_{max} = 4V$ ~~$(= \pm 4V)$~~

$b = 3$

$N = 2^3 = 8$

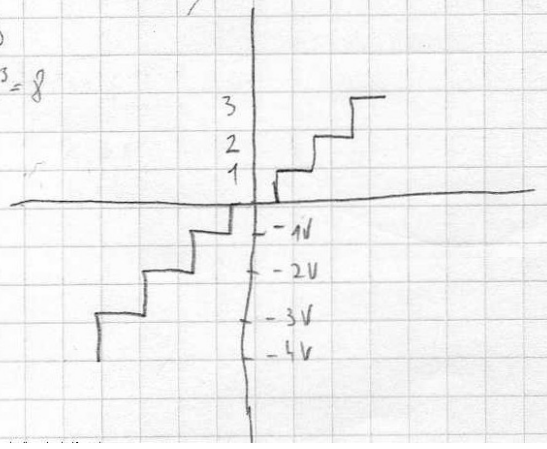


tabela	
0 1 1	3
0 1 0	2
0 0 1	1
0 0 0	0
1 1 1	-1

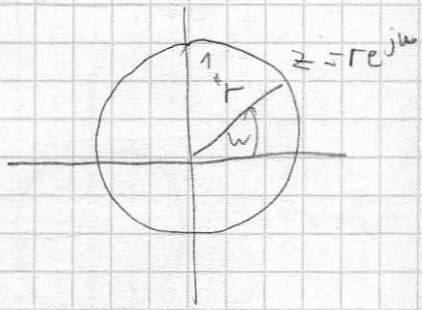
4. DTFT

$\mathcal{F}$:

$$X(w) = \sum_{n=-\infty}^{+\infty} x(n) \cdot e^{-jwn}$$

$\mathcal{Z}$: $X(z) = \sum_{n=-\infty}^{\infty} x(n) z^{-n}$ $\qquad z^{-1} = r \cdot e^{-jw}$

$$= \sum_{n=-\infty}^{\infty} x(n) r^{-n} e^{-jwn}$$



$r = 1 \longrightarrow \mathcal{Z} = \mathcal{F}$

5. Dve metodi.

metodi - Decimacija po času

- Decimacija po frek. (se zdruzuje v časovnem)