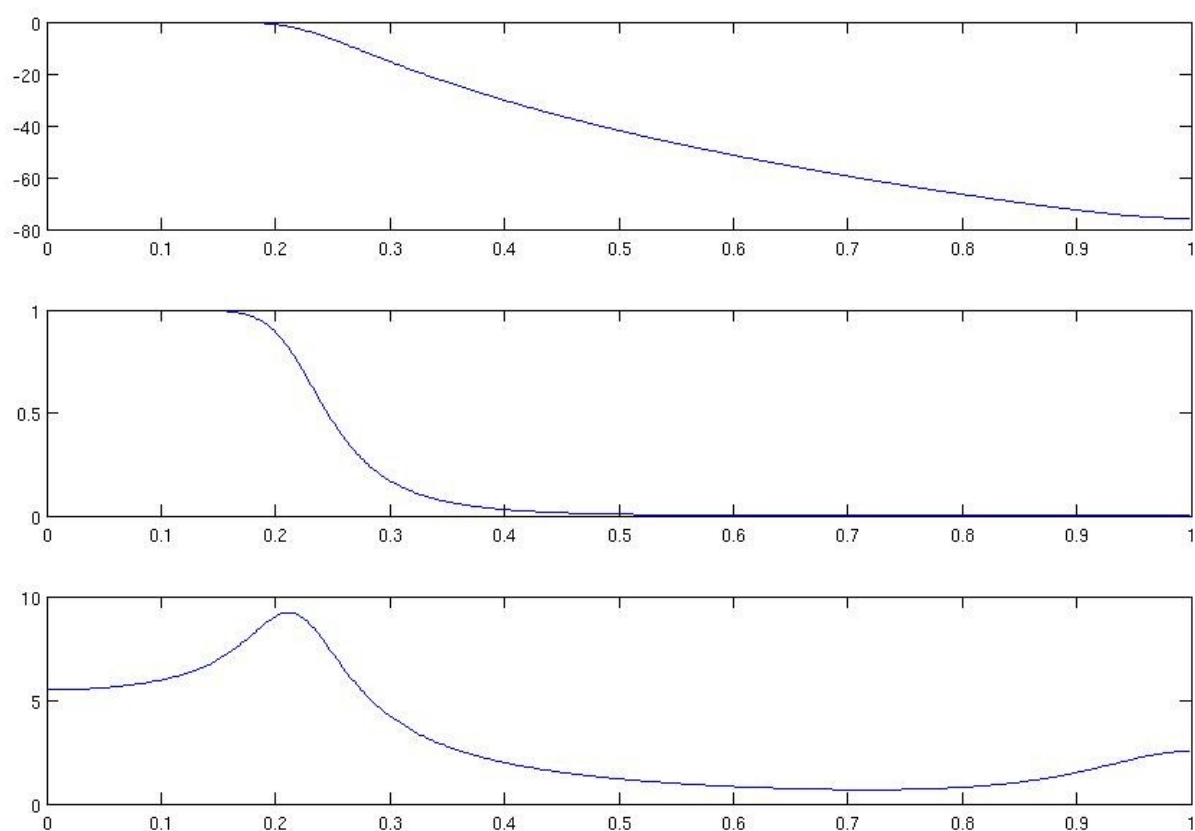


Name: klodjan Hidri
AM: 2726
login: hidri@csd.uoc.gr

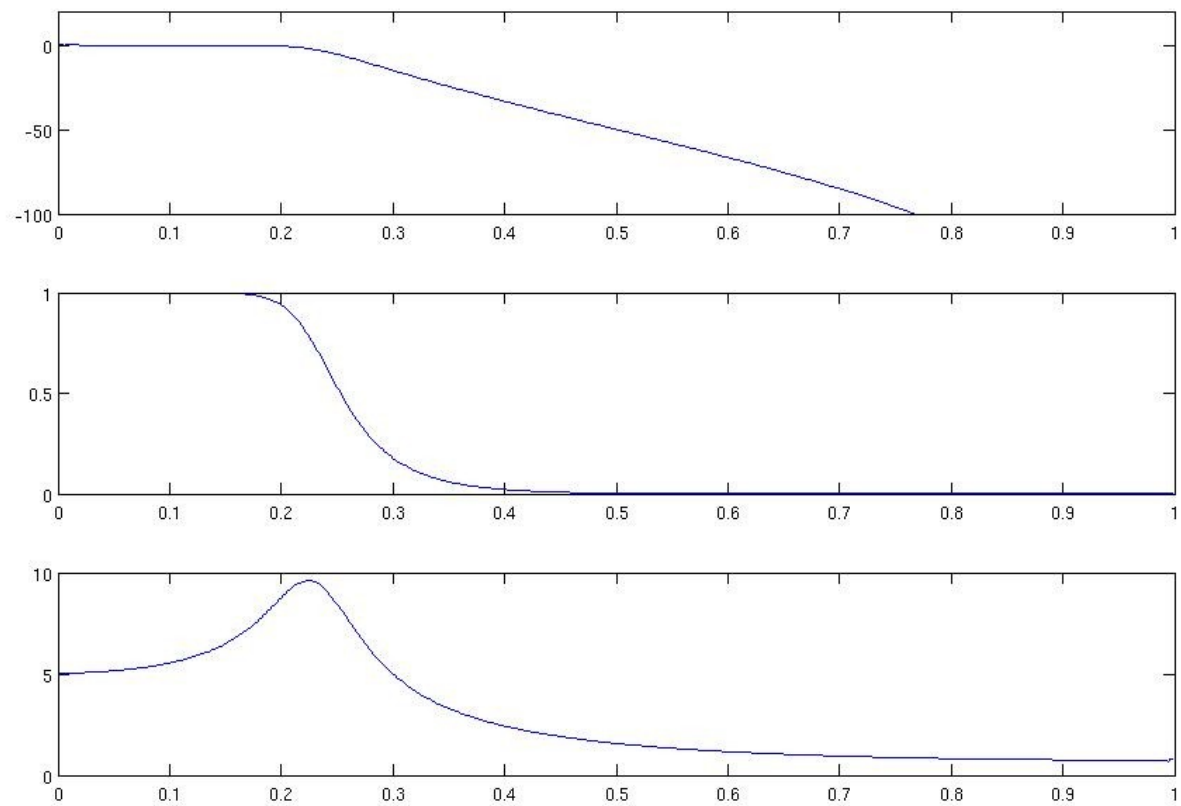
Askisi2

I)



Sto 0.2π ksekinaei to transmission mexri kai sto 0.3π kai meta apo to 0.3π kovei tis suxnotites giati plisiazei to 0 to platos .

ii)



Opws sto invariance kai sto biliniar to passband ksekinaei sto 0.2π kai teleiwnei sto 0.3π .

Где α и N :

пример: $\frac{1}{\sqrt{1+\varepsilon^2}} = 0.89125 \Rightarrow \sqrt{1+\varepsilon^2} = \frac{1}{0.89125} \Rightarrow$

$$\varepsilon^2 + 1 = \left(\frac{1}{0.89125} \right)^2 \Rightarrow \varepsilon = \sqrt{\left(\frac{1}{0.89125} \right)^2 - 1}$$

$$\frac{1}{A} = 0.17783 \Rightarrow A = \frac{1}{0.17783}$$

$$K_1 = \frac{\varepsilon}{\sqrt{A^2 - 1}}, \quad K = \frac{Q_p}{Q_s}$$

$$K_1 = \frac{\sqrt{\left(\frac{1}{0.89125} \right)^2 - 1}}{\sqrt{\left(\frac{1}{0.17783} \right)^2 - 1}}$$

$$K = \frac{Q_s}{Q_p} = \frac{0.3}{0.2}$$

$$N = \frac{\log_{10} \left(\frac{1}{K_1} \right)}{\log_{10} \left(\frac{1}{K} \right)}$$

Где α и Q_c $\mu\varepsilon$ $N=60$

$$1 + \left(\frac{0.2\pi}{Q_c} \right)^{2.6} = \left(\frac{1}{0.89125} \right)^2 \Leftrightarrow \frac{0.2\pi}{Q_c} = \sqrt[2.6]{\left(\frac{1}{0.89125} \right)^2 - 1} \Leftrightarrow$$

$$Q_c = \frac{0.2\pi}{\sqrt[2.6]{\left(\frac{1}{0.89125} \right)^2 - 1}}$$

Ασκηση 2

11) Για το N :

- πρώτη λύση βιβλίου :

$$N = \frac{\log \left[\left(\left(\frac{1}{0.17783} \right)^2 - 1 \right) / \left(\left(\frac{1}{0.24625} \right)^2 - 1 \right) \right]}{2 \log [\tan(0.15\pi) / \tan(0.07\pi)]}$$

- δεύτερη λύση παρομοια με το invariance :

$$Q_c = \frac{\tan(0.15\pi)}{2 \cdot \sqrt{\left(\frac{1}{0.17783} \right)^2 - 1}}$$