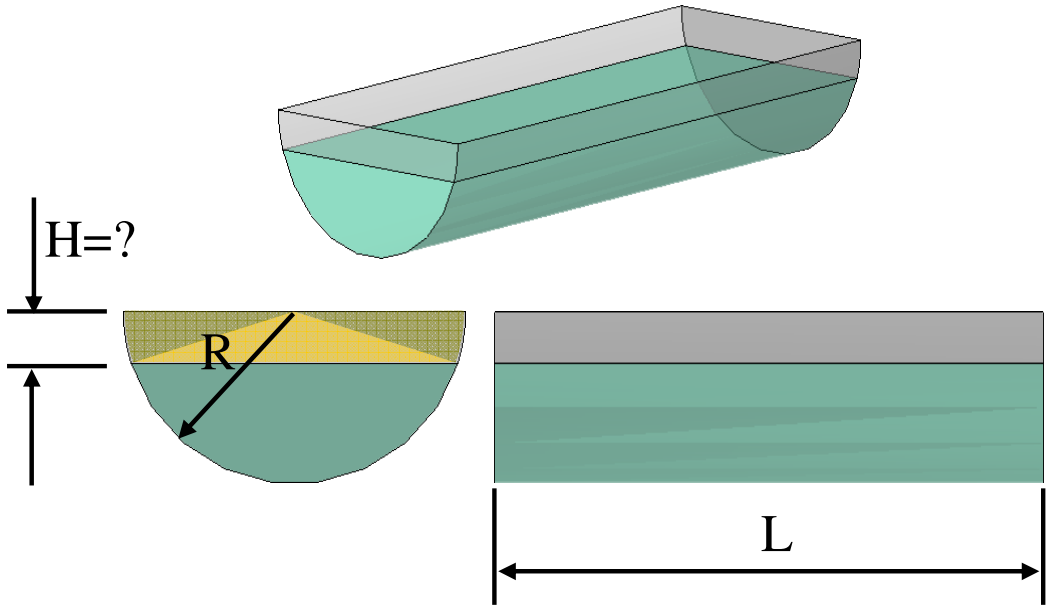
10-1. naloga: določite nivo tekočine v posodi, če je volumen tekočine poznan

$V = 0.4\,m^3$

$L = 2\,m$

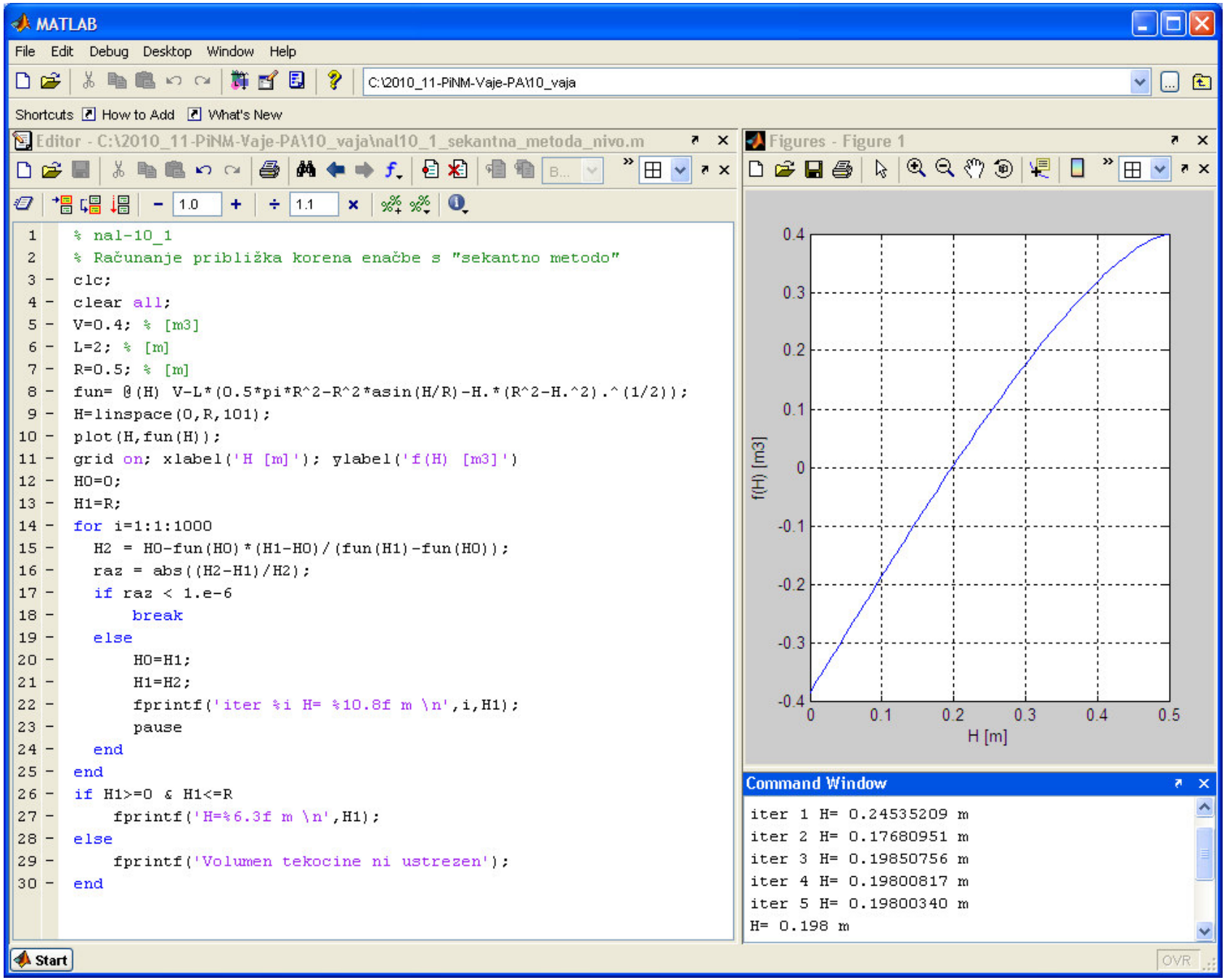
$R = 0.5\,m$



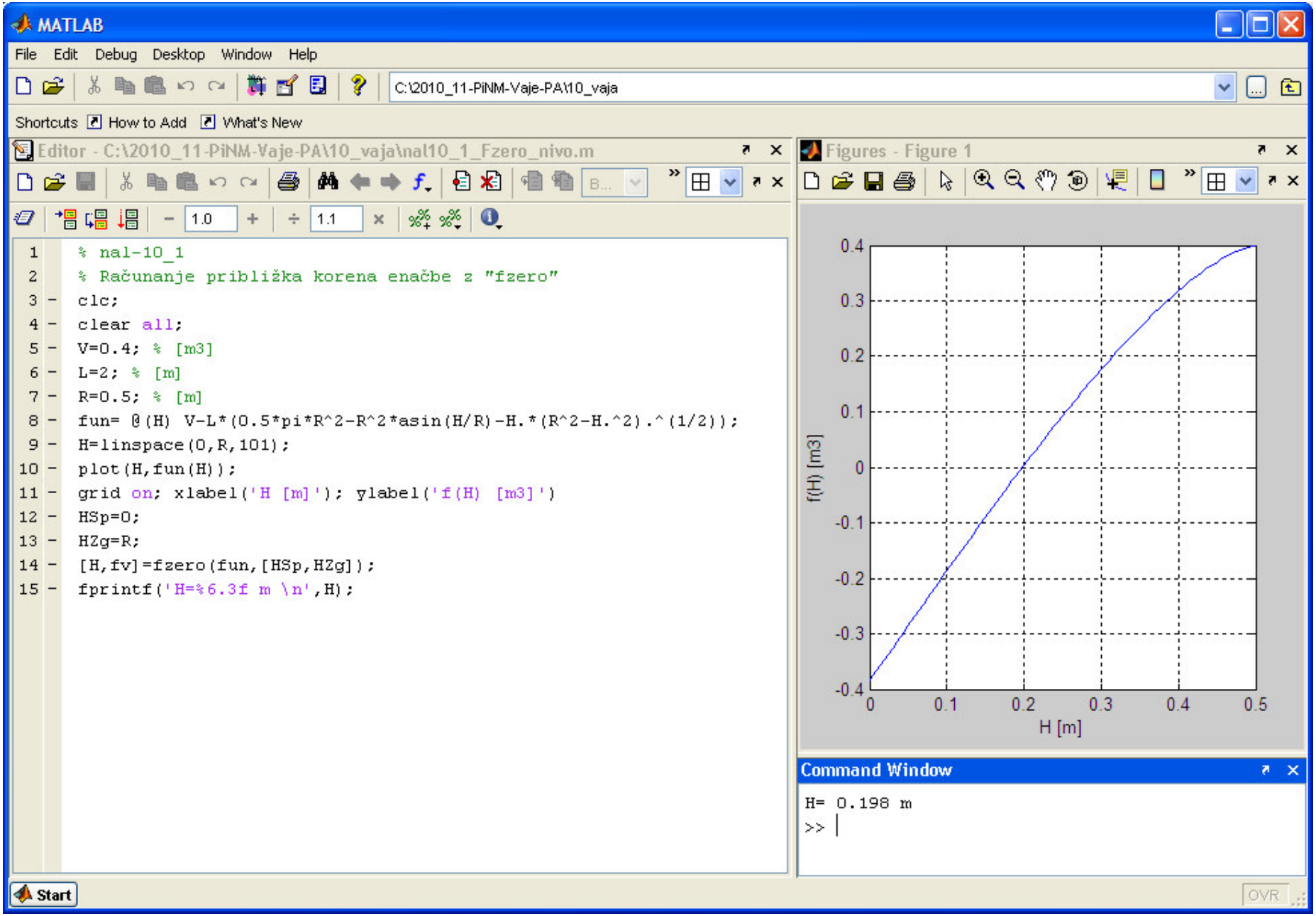
$$V = L\left[0.5\pi R^2 - R^2 \arcsin(H/R) - H\sqrt{R^2 - H^2}\right]$$

$$f(H) = V - L\left[0.5\pi R^2 - R^2 \arcsin(H/R) - H\sqrt{R^2 - H^2}\right] = 0$$

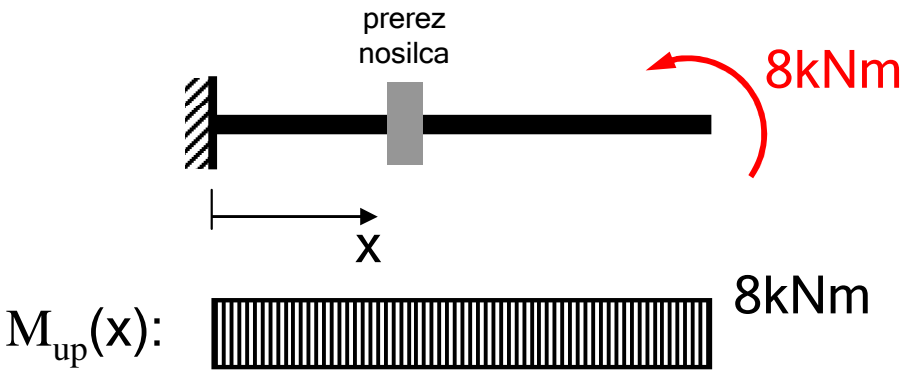
10-1. naloga: določite nivo tekočine v posodi, če je volumen tekočine poznan

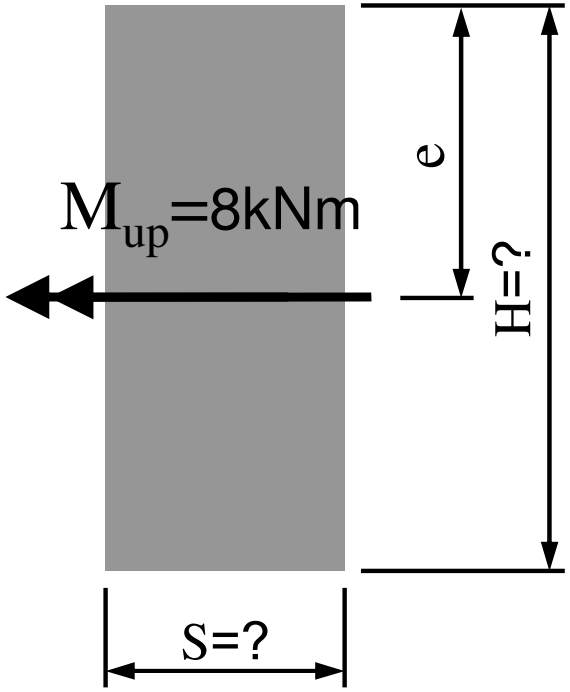


10-1. naloga: določite nivo tekočine v posodi, če je volumen tekočine poznan



10-2. naloga: določite dimenzije pravokotnega prereza





$$\sigma_{xx} = \frac{M_{up}\, e(H)}{I(S,H)} \leq \sigma_{dop}$$

$$I(S,H) = \frac{S H^3}{12}\ ,\quad e(H) = \frac{H}{2}$$

$$\rho\ A(S,H)\ L_{nosilec} = m_{nosilec}$$

$$A(S,H) = S\ H$$

$$L_{nosilec} = 2\,m$$

$$m_{nosilec} = 50\,kg$$

$$\sigma_{dop} = 100\,MPa$$

$$\rho = 7800\,kg/m^3$$

10-2. naloga: določite dimenzije pravokotnega prereza

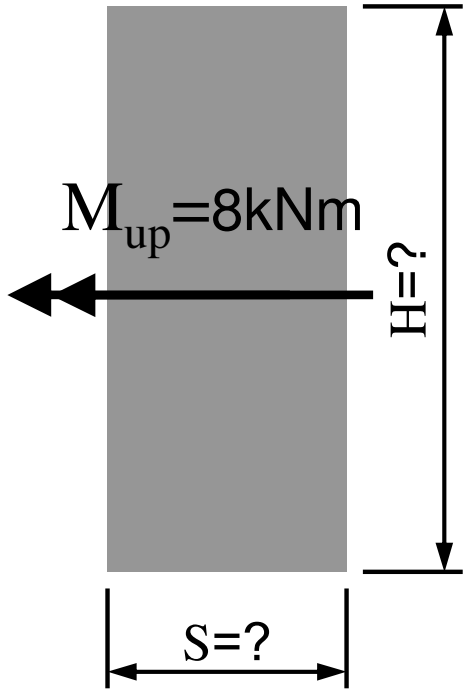
Rešite sistem nelinearnih enačb

po Newton-ovi metodi:

$$f_H(S,H) = H - \frac{m_{nosilec}}{L_{nosilec}\ \rho\ S} = H - \frac{K_1}{S} = 0$$

$$f_S(S,H) = S - \frac{6\ M_{up}}{\sigma_{dop}\ H^2} = S - \frac{K_2}{H^2} = 0$$

$$H = ? \quad , S = ?$$



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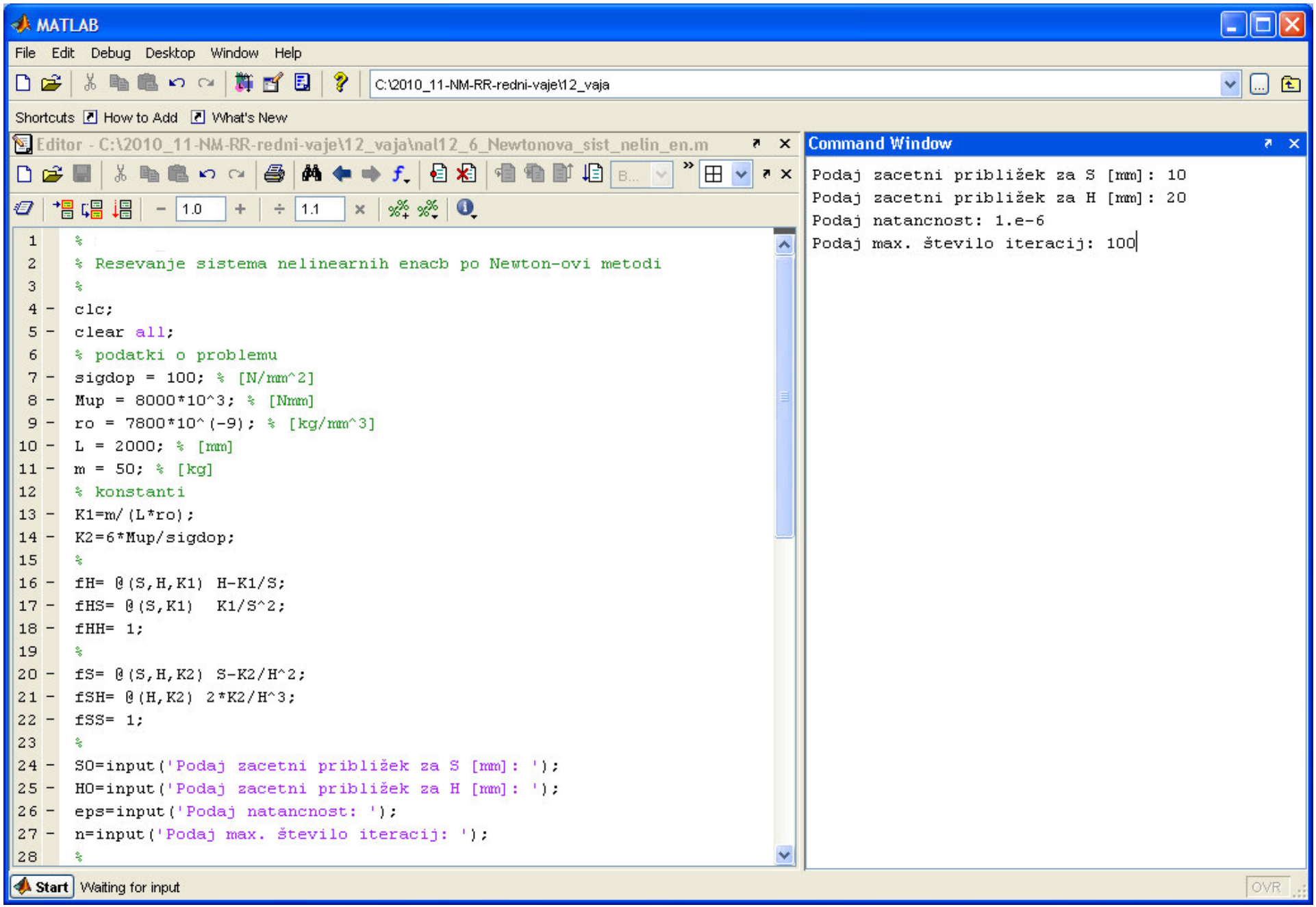
10-2. naloga: določite dimenzije pravokotnega prereza



10-2. naloga: določite dimenzije pravokotnega prereza