

Sedaj je potrebno pogledati kaj se dogaja na robovih (robni pogoji), ki pa so:

$$\begin{aligned} \textcircled{*} \quad \psi_2\left(\frac{a}{2}\right) &= \psi_3\left(\frac{a}{2}\right) \\ \psi_2'\left(\frac{a}{2}\right) &= \psi_3'\left(\frac{a}{2}\right) \end{aligned}$$

$$\begin{aligned} \text{a)} \quad \psi_2\left(\frac{a}{2}\right) &= C \cos\left(k \frac{a}{2}\right) \\ \psi_3\left(\frac{a}{2}\right) &= F e^{-\alpha \frac{a}{2}} \end{aligned} \Rightarrow \boxed{C \cos\left(k \frac{a}{2}\right) = F e^{-\alpha \frac{a}{2}}} \quad (1)$$

$$\begin{aligned} \text{b)} \quad \psi_2'\left(\frac{a}{2}\right) &= C \sin\left(k \frac{a}{2}\right) k \\ \psi_3'\left(\frac{a}{2}\right) &= -F e^{-\alpha \frac{a}{2}} \alpha \end{aligned} \Rightarrow \boxed{C \sin\left(k \frac{a}{2}\right) k = -F e^{-\alpha \frac{a}{2}} \alpha} \quad (2)$$

Enačbo (2) delimo z prvo (1) enačbo:

$$\boxed{\operatorname{tg}\left(k \frac{a}{2}\right) = \frac{1}{k} \alpha = \frac{\alpha}{k}}$$

Lika funkcija:

$$\begin{aligned} \psi_2 &= D \sin(kx) \\ \psi_1 &= -F e^{-\alpha x} \\ \psi_3 &= F e^{\alpha x} \end{aligned}$$

$$\begin{aligned} \psi_2\left(\frac{a}{2}\right) &= \psi_3\left(\frac{a}{2}\right) \\ \boxed{D \sin\left(k \frac{a}{2}\right) &= -F e^{-\alpha \frac{a}{2}}} \quad (3) \end{aligned}$$

$$\begin{aligned} \psi_2'\left(\frac{a}{2}\right) &= \psi_3'\left(\frac{a}{2}\right) = \psi_1'\left(\frac{a}{2}\right) \\ \boxed{k D \cos\left(k \frac{a}{2}\right) &= +F e^{-\alpha \frac{a}{2}} \alpha} \quad (4) \end{aligned}$$

Enačbo (3) delimo s enačbo (4):

$$\operatorname{tg}\left(k \frac{a}{2}\right) \frac{1}{k} = -\frac{1}{\alpha}$$

$$\boxed{\operatorname{ctg}\left(k \frac{a}{2}\right) = -\frac{\alpha}{k}}$$