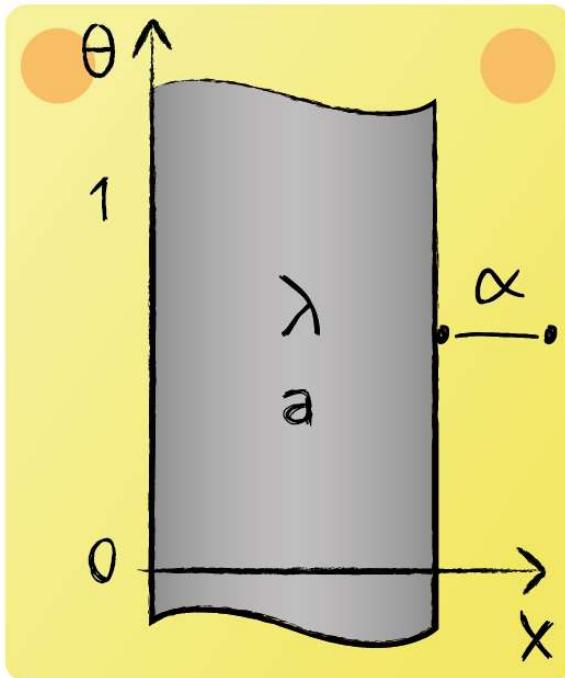
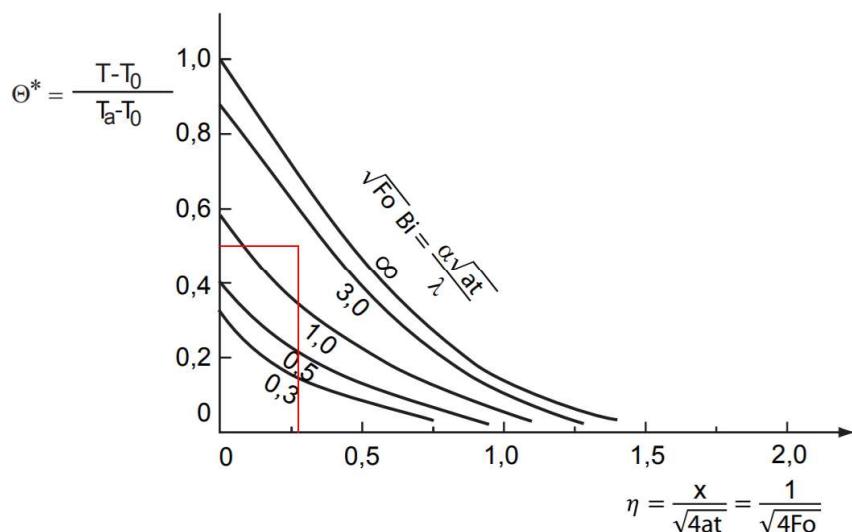


Lecture 16 - Question 4



Determine for a plate for which position x is $\theta^*(\eta) = 0.5$ reached after $t=10$ s? Take $\alpha = 3000$ W/m²K, $\lambda = 40$ W/mK and $a = 100 \cdot 10^{-6}$ m²/s. Use Figure 5.6 from the Lecture Notes.



$$\sqrt{F_o} \cdot Bi = \frac{\alpha \sqrt{a \cdot t}}{\lambda} = 2.3717 \rightarrow \eta = 0.275$$

$$x = 2\eta\sqrt{at} = 0.0174 \text{ m}$$