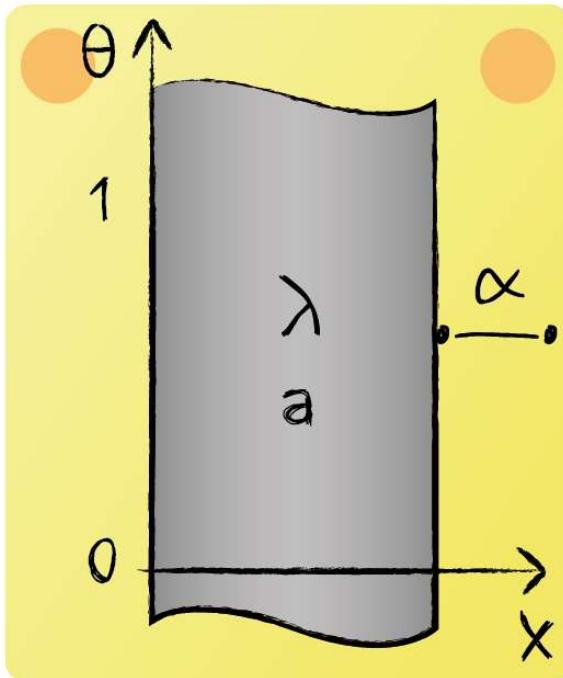
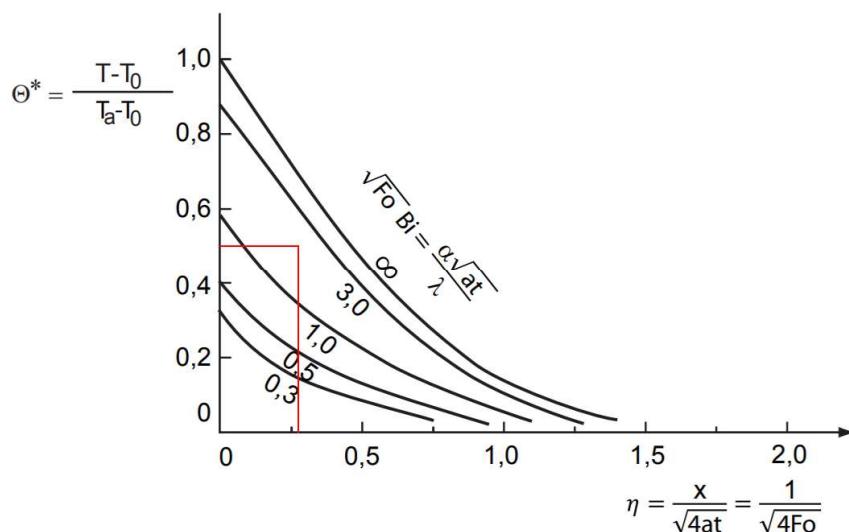


## Lecture 16 - Question 4



Determine for a plate for which position  $x$  is  $\theta^*(\eta) = 0.5$  reached after  $t=10$  s? Take  $\alpha = 3000$  W/m<sup>2</sup>K,  $\lambda = 40$  W/mK and  $a = 100 \cdot 10^{-6}$  m<sup>2</sup>/s. Use Figure 5.6 from the Lecture Notes.



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

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