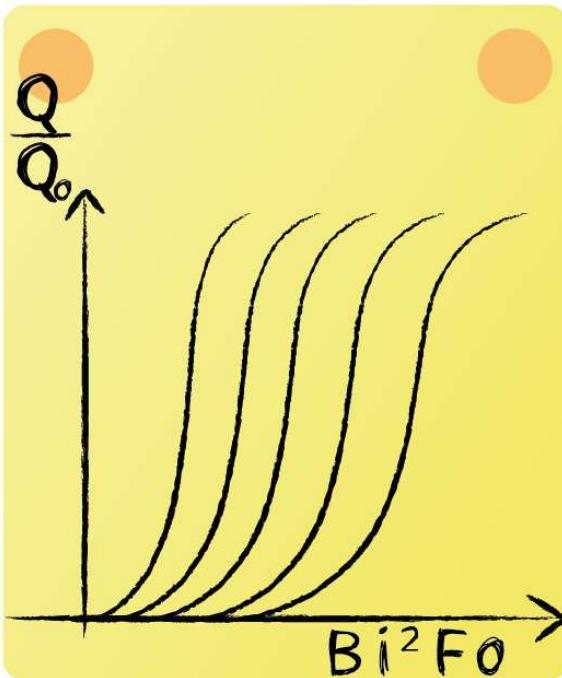


Lecture 17- Question 6



Remember the Heisler diagram for a plate as sketched in the figure. A flat plate surrounded by a fluid, with the known parameters λ , a , α , T_a , m and x_1 , has at time instant t_0 temperature T_0 . After some time the temperature at the center has cooled down to T_1 at time instant t_1 . Which of the following parameters can **only** be determined with use of the Heisler diagram?



The dissipated heat after heat dissipation Q and the remaining heat after heat dissipation Q_t .

After determination of the dissipated heat Q by the Heisler diagram and after calculation of total heat stored in the object $Q_o = m \cdot c_p \cdot (T_0 \cdot T_a)$ the remaining heat after heat dissipation $Q_t = Q_o - Q$ can be determined. This would not be possible without use of the Heisler diagram.

The other parameters are given or can be calculated by their known formulas.