

CHEM-E7130 Pre-exam
16.9.2020

Examination time is 45 min.

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1. Derive a model for heat exchanger (temperature profiles), where hot and cold liquids flow co-currently at two sides of a wall. You can assume a constant overall heat transfer coefficient, constant physical properties, no heat losses to the environment, and steady state.

2. Show that linearization of a function $y(x) = \frac{e^{2x} - 1}{e^{2x} + 1}$ is a precise solution of the original equation at the linearization point x_0 .