BAE 511 Air-conditioning & Refrigeration Heat Transfer
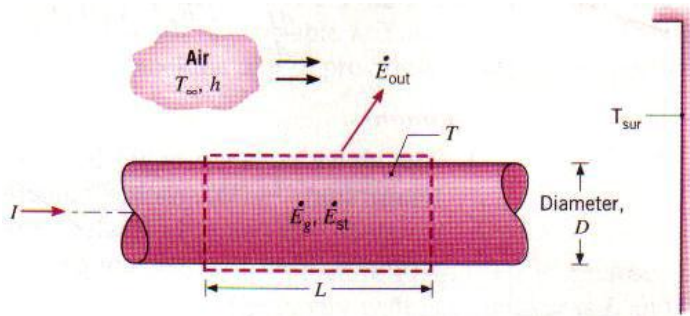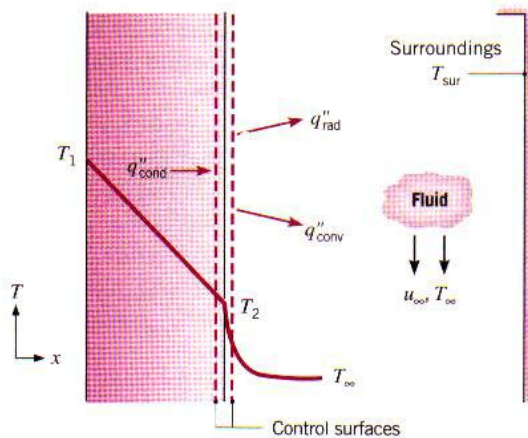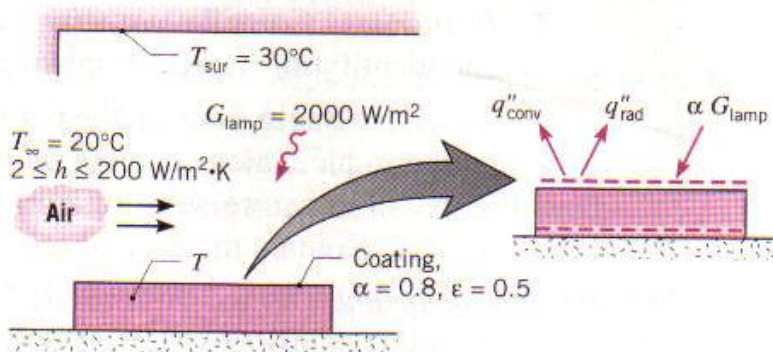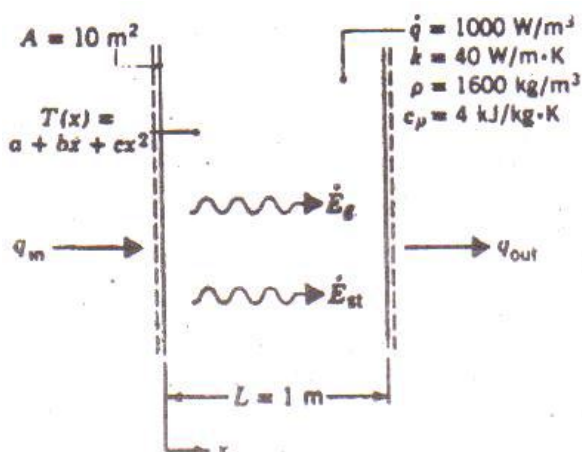## Test

1.Write the equation for the given system

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3. Coating with precribed radiation properties is cured by irradiation from an infrared lamp. Heat transfer from the coating is by convection to ambient air & radiation exchange with the surrounding. Find Cure temperature for h = 15 W/m2.K

4. *Known*: $T(x) = a + bx + cx2$ [°C] a = 900 °C, b = -300 °C/m, c = -50 °C/m2 q'= 1000 W/m3
Find qin (x = 0) and qout(x = 1 m), $\dot{E}_{st}$, dT/dt at x = 0, 0.25, 0.5 m

5.Write the heat diffusion equation for control volume.

6.Write the heat transfer equations general form in spherical co-ordinate.

7. *Known*: Hot coffee is separated from its cooler surroundings by a plastic flask, an air space, and a plastic cover.

Find: Relevant heat transfer processes.

8.Write ventilation design process

9. Write duct design process

10. (a)Write affinity laws for pump formulas

   (b)Write annual fuel usage formula.