Homework

1. A short summary about the conductive heat transfer.

When the heat transfers through the wall, it will be lost, and the loss of heat rate () is related to the conductivity of the material (K), area of the wall (A), thickness (L) and delta T, which can be calculated by the formula = kA (delta T)/L, or the formula = (delta T)/,= L/kA. The heat loss rate () is inversely proportional to area of the wall (A) and the conductivity of the material (K), and delta T.

1. Solving the same exercise with L=0.4m A=20㎡ △T=25℃ K=0.78 using both simple method and using the resistance concept.

By using the simple method:

= kA= 0.78 • 20 • = 975W

By using the resistance concept:

= = ≈ 0.0256

= = ≈ 976.56W