

Chapter4_example4

The Biot number is 0.244,

The value of diffusivity is 2.16×10^{-7} sq.m/s

Since value of Biot number is greater than 0.1,

Lumped capacity approach would not give accurate results, so figure 4.8 is to be used

The Biot Number for using figure 4.8 is 0.731

The dimensionless temperature is 0.158

The required time is 1.34×10^4 s = 3.7 hr

$Bi^2 Fo = 5.6 \times 10^{-1}$

The heat transferred is -1.609×10^4 J