#Jenny

Finally I get this ebook, thanks for all these I can get now!

#Rio

Cool! I'am really happy

#Markus Jensen

I did not think that this would work, my best friend showed me this website, and it does! I get my most wanted eBook

#Hun Tsu

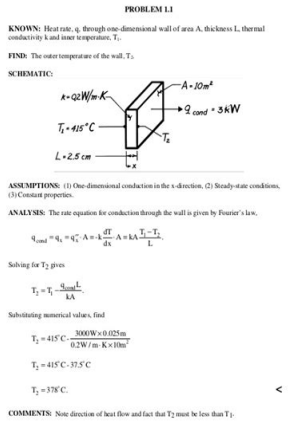
wtf this great ebook for free?!

#Che Salsa

My friends are so mad that they do not know how I have all the high quality ebook which they do not!

#Diego Butler

so many fake sites. this is the first one which worked! Many thanks



PROBLEM 1.1

KNOWN: Heat rate, q, through one-dimensional wall of area A, thickness L, thermal conductivity k and inner temperature, T_1.

FIND: The outer temperature of the wall, T_2.

SCHEMATIC:

ASSUMPTIONS: (1) One-dimensional conduction in the x-direction, (2) Steady-state conditions, (3) Constant properties.

ANALYSIS: The rate equation for conduction through the wall is given by Fourier's law,

$$q_{cond} = q_x = q_x'' \cdot A = -k\frac{dT}{dx} \cdot A = kA\frac{T_1 - T_2}{L}.$$

Solving for T_2 gives

$$T_2 = T_1 - \frac{q_{cond} L}{kA}.$$

Substituting numerical values, find

$$T_2 = 415°C - \frac{3000 W \times 0.025 m}{0.2 W/m \cdot K \times 10 m^2}$$

$$T_2 = 415°C - 37.5°C$$

$$T_2 = 378°C.$$ <

COMMENTS: Note direction of heat flow and fact that T_2 must be less than T_1.

Download PDF version of :

Foundations Of Heat Transfer 6th Edition Solution