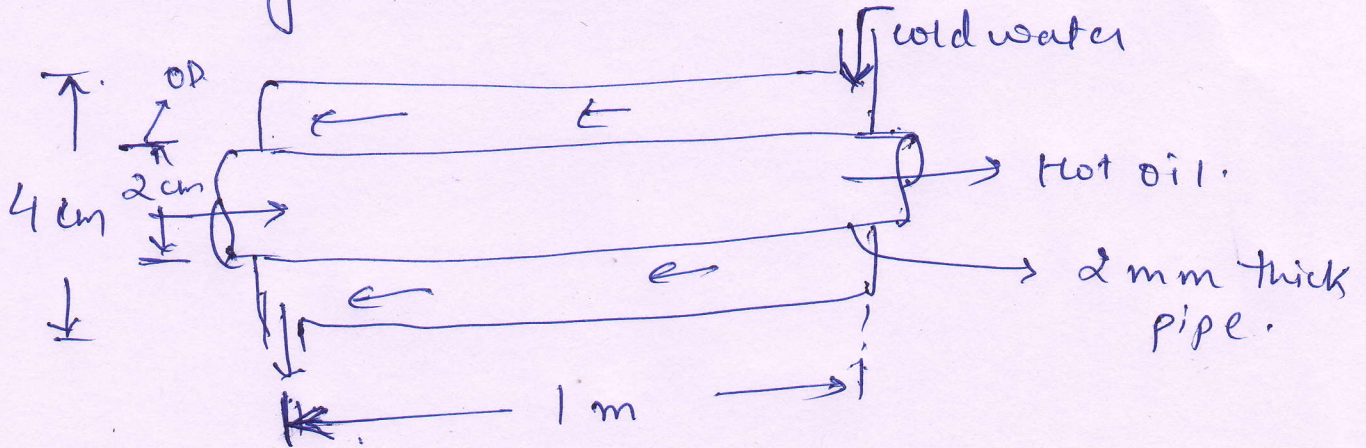


Tutorial Problem - 5

Q.1 Heat is transferred from hot oil to cold water in the concentric pipe heat exchanger as shown below.



The heat transfer coeff. on the water side is $140 \frac{\text{W}}{\text{m}^2 \cdot \text{K}}$ and on the oil side is $150 \frac{\text{W}}{\text{m}^2 \cdot \text{K}}$.

The pipe is made of G.I. ($k = 30 \frac{\text{W}}{\text{m} \cdot \text{K}}$).

Unfortunately, the rate of heat transfer is found inadequate. Will the change of material of pipe from G.I. to Copper ($k = 386 \frac{\text{W}}{\text{m} \cdot \text{K}}$) help in achieving a heat transfer rate?? Justify.