# Heat Transfer Questions & Answers

**Question by Student 201428239**

*Professor, I have a question about Assignment 7 of Q5. In this problem, Can I use correlation equation about vertical plane?? Or Should I use irregular solids?? And also, In your lecture note, there is an example about free conv H-T example(Desktop problem with q=30W). In that problem, we determined surface T first and then free convection heat transfer coefficient. But this problem is opposite. Can I determine free convection heat transfer coefficient without surface Temperature??? Thank you.*

Use the most accurate correlation generally. Yes, you can find the $h$ without knowing the surface temperature a priori through an iterative process.

**Question by Student 201428239**

*Professor, I have a question about A7 of Q6. In this problem, I think I should use Nu as flow across a sphere. But in table, there is a expression about $u_w$ (viscosity at the wall)what is it exactly?? Do I go right??*

Well, as you mention, $\mu_w$ is the viscosity of the fluid at the wall determined at the temperature of the wall.

**Question by Student 201428239**

*Professor, I have a question about A7 of Q6. I don't know how to find $\mu_w$ in this problem. Is it fine to assume this is same as $\mu_\infty$ ??*

Find the wall temperature, and then find $\mu_w$ from this wall temperature.

**Question by Student 201427135**

*Professor, I have a question about the class. You taught us about hydraulic diameter, example for river. But I can't understand why it doesn't have friction area on the both sides. I thought river has ground on bottom and on both sides (actually extended ground ) also. Thank you.*

True, it could be this way, but I was thinking of a river section where the sides are flowing water.

**Question by Student 201527136**

*Professor, I have a question about heat transfer in pipe. You said $\Delta T_{lmtd}$ is almost same with $T_w - \frac{1}{2}(T_{b,o} - T_{b,i})$ when $\frac{T_w - T_{b,o}}{T_w - T_{b,i}} \geqslant 0.5$. If $T_{b,o}$ is not given, I can't judge $\frac{T_w - T_{b,o}}{T_w - T_{b,i}} \geqslant 0.5$. Then, do I have to use only $\Delta T_{lmtd}$ instead of $T_w - \frac{1}{2}(T_{b,o} - T_{b,i})$?*

Solve the problem and check if the simplified expression can be used or not. If it can not be used, re-solve the problem with the full expression.

## Question by Student 201428239

*Professor, I have a question about A8 of Q1. I need $\mu$ to calculate Reynolds Number. In your lecture note of EG H-T in pipe, we used $\mu$ at average bulk $T$. What happened if I use $\mu$ at wall Temperature??? Does it cause wrong answer?*

If you really want to know, you can try this in the quiz or exams and find out how many points you will lose.