Expt. 6 Critical radius of insulation:

1. In the experiment, one temperature is maintained the same for all test specimens. Which temperature is that, and why?
2. Will there be a critical thickness of insulation in a slab geometry? Explain your answer.
3. Is the convection heat transfer coefficient for the outer surface of the insulation for all test specimens the same? Explain your answer.

Expt 11 Cross flow

1. The setup is designed with the cylinder at the entrance to the duct, and the blower operating under “suction” mode. Is this preferred over a design where the cylinder is downstream of the blower in the duct? Or it does not make any difference. Explain your answer.
2. In the midplane of the cylinder, there are 4 thermocouples. Draw a schematic of this, showing the end (or side) view, and point out which thermocouple shows the minimum temperature and which one shows the maximum temperature. Explain why this is the case.
3. Can we use an orifice meter instead of the venturi meter for flow measurement in this experiment? Explain your answer.