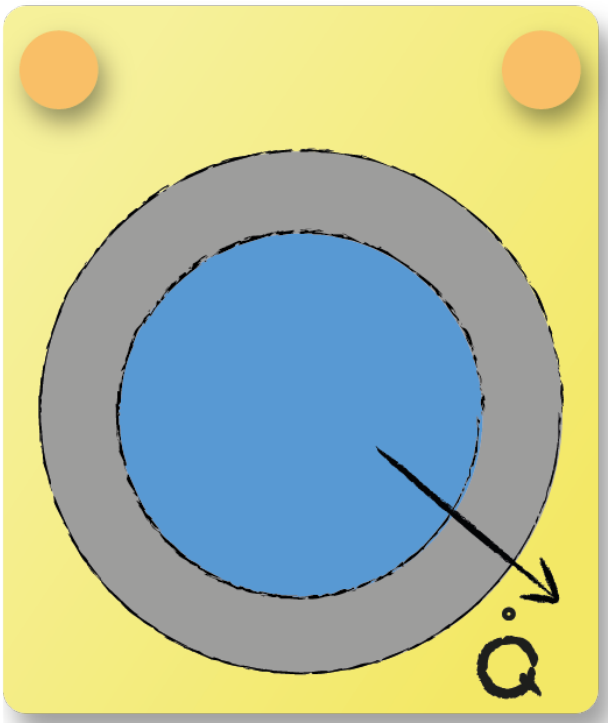
Lecture Fins Question 2



Water is flowing through a thin walled pipe. For cooling purposes heat shall be transfered to the surrounding air. In which reasonable way can fins be used to increase the cooling performance?

Heat transfer coefficient of a water flow is usually significantly greater than that of an air flow. Therefore fins are more advantageous at the outer surface, decreasing the convective thermal resistance. Never the less fins can also provide improvements on heat transfer at the inner surface. In this case a higher pressure drop within the water has to be considered.