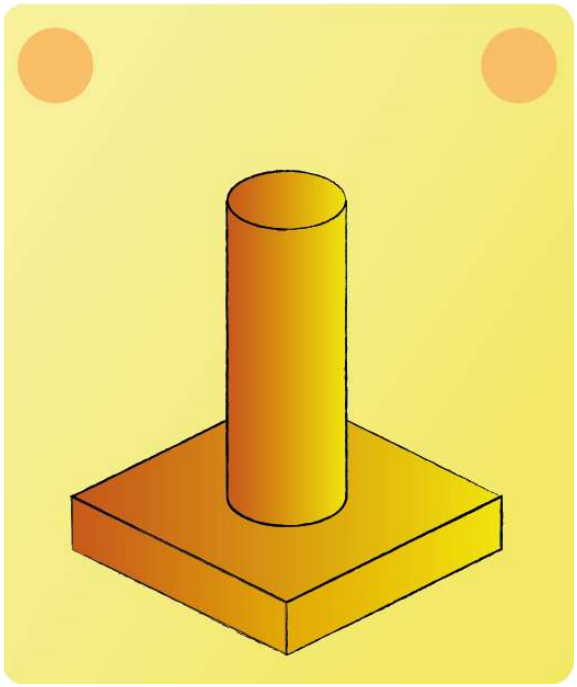
Lecture 12 - Question 2



Which of the statements is/are true regarding an ideal fin?

An ideal fin is characterized by a fin efficiency of 1. Looking at the fin efficiency equation:

$$\eta_R = \frac{Heat\ transferred\ from\ a\ fin}{Maximum\ amount\ of\ transferable\ heat}$$

It can be noted that the heat transferred should equal the maximum amount of transferable heat. For that reason an ideal fin does transfer the maximum amount of heat.

The effectiveness does not tell something about the state or quality of being efficient. For that reason an ideal fin does not have to have a effectiveness of 1.

Maximum transferable heat flow is achieved when the temperature remains equal to the base temperature along the entire length of the fin. For that reason the temperature along an ideal fin equals the base temperature.

An ideal fin does not always transfer more heat than a non-ideal fin. The word 'ideal' gives information regarding the efficiency and not regarding the capacity.

As mentioned before an ideal fin will always have an efficiency of 1.