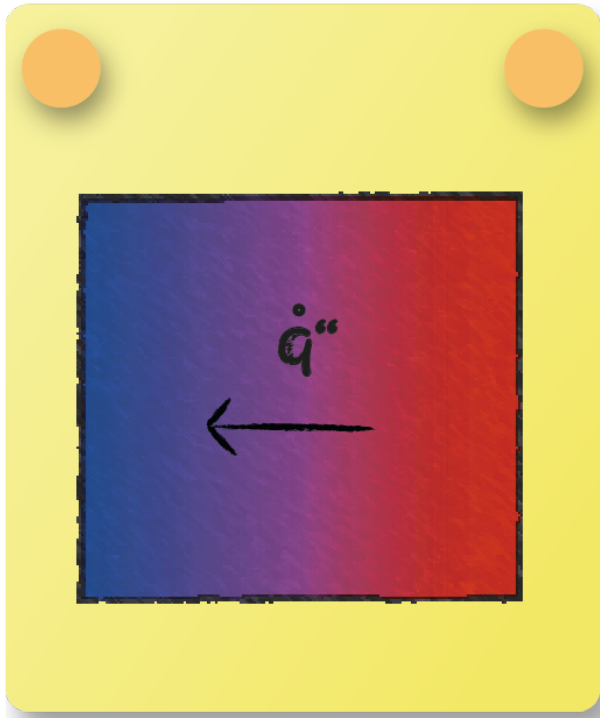


Lecture 1 - Question 4



Select the correct equation for one-dimensional heat conduction.

$$\dot{Q} = -A \lambda \frac{dT}{dx}$$



Since temperature is the driving potential for heat conduction the heat flux is proportional to its gradient $\frac{dT}{dx}$. The negative sign states that heat is conducted towards lower temperatures. Material properties are accounted for by the thermal conductivity λ as the geometry is considered by area A .