

## Name the Expression

The expression given below: “The cyclic integral of  $\frac{\delta Q}{T}$  is always less than or equal to zero”, is known as the ....

Answer: Clausius inequality

Explanation: The Clausius statement states that it is impossible to construct a device that operates in a cycle and produces no effect other than the transfer of heat from a lower-temperature body to a higher-temperature body. In the Kelvin-Planck statement it is stated that it is impossible for any device that operates on a cycle to receive heat from a single reservoir and produce a net amount of work.

Both are alternative statements of the second law of thermodynamics.

The Kelvin temperature scale is the absolute temperature scale that is independent of the properties of the substance. Conservation of heat is nonsense.