Name : $Solution$ Id :   Sec. # :

A scientist has two thermometers; one reads in degrees Celsius and the other reads in Kelvin. He measured the temperature of a substance and he found that the temperature reading in degrees Celsius is one-third that in Kelvin. What is the temperature of the substance in Kelvin?

Let T_c be the temperature in degrees Celsius

T_k " " " $\simeq$ Kelvin.

$$T_c = \frac{1}{3} T_k$$

But

$$T_c = T_k - 273.15$$

$$\Rightarrow \quad T_k - 273.15 = \frac{T_k}{3}$$

$$\Rightarrow \quad \frac{2}{3} T_k = 273.15$$

$$\Rightarrow \quad \boxed{T_k = \frac{3 \times 273.15}{2} = 409.7 \, K}$$