Exercise 94

Convert the temperature of scalding water, 54 °C, into degrees Fahrenheit and kelvin.

Solution

The Fahrenheit temperature is

$$\begin{aligned} ^\circ\text{F} &= \frac{9}{5}(^\circ\text{C}) + 32.0 \\ &= \frac{9}{5}(54) + 32.0 \\ &\approx 97 + 32.0 \quad \text{(rounded to two significant figures)} \\ &\approx 129 \quad \text{(rounded to the ones place),} \end{aligned}$$

and the Kelvin temperature is

$$\begin{aligned} \text{K} &= ^\circ\text{C} + 273.15 \\ &= 54 + 273.15 \\ &\approx 327 \quad \text{(rounded to the ones place).} \end{aligned}$$