Exercise 96

Convert the temperature of dry ice, -77 °C, into degrees Fahrenheit and kelvin.

Solution

The Fahrenheit temperature is

$$
\begin{aligned}
°F &= \frac{9}{5}(°C) + 32.0 \\
&= \frac{9}{5}(-77) + 32.0 \\
&\approx -140 + 32.0 \quad \text{(rounded to two significant figures)} \\
&\approx -110 \quad \text{(rounded to the tens place),}
\end{aligned}
$$

and the Kelvin temperature is

$$
\begin{aligned}
K &= °C + 273.15 \\
&= -77 + 273.15 \\
&\approx 196 \quad \text{(rounded to the ones place).}
\end{aligned}
$$