2. A speed follows a normal distribution $V \sim N(3, 0.1)$ km/h. What is the distribution in m/s.

Solution

$$\mu_V = 3 \text{ km/h} = \frac{3 \text{ km}}{h}\left(\frac{1000 \text{ m}}{\text{km}}\right)\left(\frac{1 \text{ h}}{3600 \text{ s}}\right)$$
$$= \frac{3000}{3600} = 0.833 \text{ m/s}$$

$$\sigma_V = 0.1 \text{ km/h} = \frac{0.1 \text{ km}}{h}\left(\frac{1000 \text{ m}}{\text{km}}\right)\left(\frac{1 \text{ h}}{3600 \text{ s}}\right)$$
$$= \frac{100}{3600} = 0.0278 \text{ m/s}$$

Thus, the distribution of the speed in m/s is $V \sim N(0.833, 0.278)$ m/s.   **Ans.**