

Problem 1-2

Represent each of the following combinations of units in the correct SI form: (a) kN/ μ s, (b) Mg/mN, and (c) MN/(kg · ms).

Solution**Part (a)**

$$\frac{1 \cancel{\text{kN}}}{1 \cancel{\mu\text{s}}} \times \frac{1000 \text{ N}}{1 \cancel{\text{kN}}} \times \frac{10^6 \cancel{\mu\text{s}}}{1 \text{ s}} = 10^9 \frac{\text{N}}{\text{s}}$$

Part (b)

$$\frac{1 \cancel{\text{Mg}}}{1 \cancel{\text{mN}}} \times \frac{10^6 \cancel{\text{g}}}{1 \cancel{\text{Mg}}} \times \frac{1 \text{ kg}}{1000 \cancel{\text{g}}} \times \frac{1000 \cancel{\text{mN}}}{1 \text{ N}} = 10^6 \frac{\text{kg}}{\text{N}} = 10^6 \frac{\text{s}^2}{\text{m}}$$

Part (c)

$$\frac{1 \cancel{\text{MN}}}{1 \text{ kg} \cdot \cancel{\text{ms}}} \times \frac{10^6 \text{ N}}{1 \cancel{\text{MN}}} \times \frac{1000 \cancel{\text{ms}}}{1 \text{ s}} = 10^9 \frac{\text{N}}{\text{kg} \cdot \text{s}}$$