

$$(a) 323 \text{ mm} \times \frac{1 \text{ m}}{1000 \text{ mm}} = 0.323 \text{ m}$$

$$(b) 22 \text{ km} \times \frac{100000 \text{ cm}}{1 \text{ km}} = 2.2 \times 10^6 \text{ cm}$$

$$(c) 43.2 \text{ cm}^2 \times \frac{1 \text{ m}}{100 \text{ cm}} \times \frac{1 \text{ m}}{100 \text{ cm}} = 0.00432 \text{ m}^2$$

$$(d) 3.2 \times 10^2 \text{ dam}^2 \times \left(\frac{10000 \text{ mm}}{1 \text{ dam}} \right)^2 = 3.2 \times 10^{10} \text{ mm}^2$$

$$(e) 3300 \text{ dm}^3 \times \left(\frac{10 \text{ cm}}{1 \text{ dm}} \right)^3 = 3300 \times 10^6 \text{ cm}^3 = 3.3 \times 10^9 \text{ cm}^3$$

$$(f) 5.8 \times 10^{-2} \text{ m}^3 \times \left(\frac{100 \text{ cm}}{1 \text{ m}} \right)^3 = 5.8 \times 10^4 \text{ cm}^3$$

$$(g) 0.037 \text{ m}^3 \times \frac{1000 \text{ cm}}{1 \text{ m}} \times \frac{1000 \text{ cm}}{1 \text{ m}} \times \frac{1000 \text{ cm}}{1 \text{ m}} = 37 \times 10^9 \text{ cm}^3 = 3.7 \times 10^9 \text{ cm}^3$$

$$(h) 249.7 \text{ cm}^3 = 249.7 \text{ mL} \times \frac{1 \text{ L}}{1000 \text{ mL}} = 0.2497 \text{ L}$$

$$(i) 2.5 \text{ min} \times \frac{60 \text{ s}}{1 \text{ min}} = 150 \text{ s}$$

$$(j) 540 \text{ s} \times \frac{1 \text{ min}}{60 \text{ s}} = 9.0 \text{ min}$$

$$(k) 2.5 \text{ h} \times \frac{3600 \text{ s}}{1 \text{ h}} = 9000 \text{ s} = 9.0 \times 10^3 \text{ s}$$

$$(l) 8500 \text{ s} \times \frac{1 \text{ h}}{3600 \text{ s}} = 2.4 \text{ h}$$

Conversions

$$2. \quad 60 \frac{\text{km}}{\text{h}} \times \frac{1000 \text{ m}}{1 \text{ km}} \times \frac{1 \text{ h}}{3600 \text{ s}} = 17 \text{ m/s}$$

$$b) \quad 9 \frac{\text{m}}{\text{s}} \times \frac{1 \text{ km}}{1000 \text{ m}} \times \frac{3600 \text{ s}}{1 \text{ h}} = 32.4 \text{ km/h} \quad (\approx 30 \text{ km/h})$$

$$c) \quad 120 \frac{\text{km}}{\text{h}} \times \frac{1 \text{ h}}{3600 \text{ s}} \times \frac{1000 \text{ m}}{1 \text{ km}} = 33 \text{ m/s}$$

$$d) \quad 2.5 \frac{\text{m}}{\text{s}} \times \frac{1 \text{ km}}{1000 \text{ m}} \times \frac{3600 \text{ s}}{1 \text{ h}} = 9.0 \text{ km/h}$$

$$e) \quad 9.8 \frac{\text{g}}{\text{cm}^3} \times \frac{1 \text{ kg}}{1000 \text{ g}} \times \frac{100 \text{ cm}}{1 \text{ m}} \times \frac{100 \text{ cm}}{1 \text{ m}} \times \frac{100 \text{ cm}}{1 \text{ m}} = 9800 \frac{\text{kg}}{\text{m}^3}$$

$$f) \quad 5600 \frac{\text{kg}}{\text{m}^3} \times \frac{1000 \text{ g}}{1 \text{ kg}} \times \left(\frac{1 \text{ m}}{100 \text{ cm}} \right)^3 = 5.6 \frac{\text{g}}{\text{cm}^3}$$

$$g) \quad 2 \frac{\text{m}}{\text{s}^2} \times \frac{1 \text{ km}}{1000 \text{ m}} \times \frac{3600 \text{ s}}{1 \text{ h}} = ~~7200 \text{ km/h/s}~~ 7.2 \text{ km/h/s}$$

↳ 7 km/h/s

$$h) \quad 20 \frac{\text{km}}{\text{h} \cdot \text{s}} \times \frac{1000 \text{ m}}{1 \text{ km}} \times \frac{1 \text{ h}}{3600 \text{ s}} = 5.6 \text{ m/s}^2 \rightarrow 6 \text{ m/s}^2$$