Solutions

Each answer shows the steps, then the **result**.

2.1

$$\text{magnification} = \frac{\text{image size}}{\text{actual size}}$$

2.2

- 1 mm = 1000 μm

$$0.05 \text{ mm} \times 1000 = \mathbf{50} \ \mu\text{m}$$

3.1 C

- magnification is a **ratio**, so it has **no unit**
- A, B and D are length units

3.2

(a)

$$40 \ \mu\text{m} = \frac{40}{1000} \text{ mm} = \mathbf{0.04} \text{ mm}$$

(b)

$$\text{magnification} = \frac{20 \text{ mm}}{0.04 \text{ mm}} = \times\mathbf{500}$$

3.3

- actual = image/magnification

$$\frac{8.0 \text{ mm}}{400} = 0.02 \text{ mm}$$

- $0.02 \times 1000 = \mathbf{20} \ \mu$m