Solutions

Marking: **M1** a correct method, **A1** the correct answer, **B1** an independent mark.

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

2.1

- $\mathbf{5.4 \times 10^{5}}$

2.2

- $\mathbf{0.0038}$

2.3

- $\mathbf{9.1 \times 10^{-5}}$

2.4

- $8 \div 2 = 4$ and $10^{6-2} = 10^{4}$
- $\mathbf{4 \times 10^{4}}$

2.5

- 30×10^{-3}
- $= \mathbf{3 \times 10^{-2}}$

3.1

- compare the powers first, then the numbers
- $\mathbf{4.1 \times 10^{3}}$, $\mathbf{9.9 \times 10^{3}}$, $\mathbf{3.2 \times 10^{4}}$, $\mathbf{2.9 \times 10^{5}}$

3.2

- $\dfrac{5.6 \times 10^{7}}{8 \times 10^{6}} = 0.7 \times 10$
- $=$ **7** times

3.3

(a)

- $12 \times 2.5 \times 10^{4} = 30 \times 10^{4}$
- $= \mathbf{3 \times 10^{5}}$

(b)

- $\dfrac{3 \times 10^{5}}{6 \times 10^{2}} = 0.5 \times 10^{3}$
- $=$ **500** boxes

3.4

(a)

- $\dfrac{3.6 \times 10^{9}}{4.5 \times 10^{6}} = 0.8 \times 10^{3}$
- $=$ **800** images

(b)

- $280\,000\,000 + 75\,000\,000 = 355\,000\,000$
- $= \mathbf{3.55 \times 10^{8}}$ bytes

(c)

- $\dfrac{3.55 \times 10^{8}}{3.6 \times 10^{9}}$
- $=$ **0.0986** (to 3 s.f.)