Solutions

Marking: **M1** a correct method, **A1** the correct answer.

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

2.1

- divide both by the HCF, 15

$$45 : 60 = \mathbf{3} : \mathbf{4}$$

2.2

- total parts $= 5 + 7 = 12$, so one part $= 240 \div 12 = \$20$

$$\$\mathbf{100} \text{ and } \$\mathbf{140}$$

2.3

- one book costs $31.50 \div 7 = \$4.50$

$$4 \times 4.50 = \$\mathbf{18.00}$$

2.4

- multiply both parts by 4: $10 : 3$, which has no common factor: $\mathbf{10} : \mathbf{3}$

2.5

- real distance $= 6 \times 25\,000 = 150\,000$ cm
- $= 1500$ m $= \mathbf{1.5}$ km

3.1

(a)

- rice per person $= 450 \div 6 = 75$ g

$$10 \times 75 = \mathbf{750} \text{ g}$$

(b)

- $600 \div 75$

$$= \mathbf{8} \text{ people}$$

3.2

(a)

- blue is 5 parts, so one part $= 45 \div 5 = 9$ counters
- total parts $= 3 + 5 + 4 = 12$

$$12 \times 9 = \mathbf{108}$$

(b)

- the difference is $4 - 3 = 1$ part

$$1 \times 9 = \mathbf{9} \text{ more green}$$

3.3

- inverse proportion: total work $= 4 \times 15 = 60$ worker-days
- $60 \div 6 = \mathbf{10}$ days

3.4

- make B the same in both: $A : B = 8 : 12$ and $B : C = 12 : 15$
- $A : B : C = \mathbf{8} : \mathbf{12} : \mathbf{15}$

3.5

- boys $3k$, girls $5k$; after: $\dfrac{3k + 18}{5k} = \dfrac{2}{3}$
- $9k + 54 = 10k$, so $k = 54$
- girls $= 5 \times 54 = \mathbf{270}$