Solutions

Award method and answer marks as indicated; accept equivalent correct methods.

2.1

- Divide each part by 12: $2 : 3 : 5$.

2.2

- Convert to cm: $150 : 60$, then divide by 30: $5 : 2$.

2.3

- $u = 56/7 = 8$, so shares are $3u =$ **24** and $4u =$ **32**.

2.4

- The scale multiplier is $8/5$: $R = 200(8/5) =$ **320** g.

3.1

(a)

- $u = 27/(2 + 7) = 3$ litres; red **6 litres**, white **21 litres**.

(b)

- One part is $14/7 = 2$ litres, so red $R = 2(2) =$ **4** litres.

(c)

- Unit costs: $c_3 = 18/3 = 6$, $c_5 = 28/5 = 5.6$ yuan per litre. **The 5-litre tin** is better value.

3.2

(a)

- Total parts $p = 2 + 5 = 7$; one part $u = 840/7 = 120$ ml.
- Concentrate **240 ml**, water **600 ml**.
- For ratio 1:4, water must be 960 ml, so add **360 ml**.

(b)

- Use $m_2 = m_1(n_2/n_1)$.
- $m_2 = 450(14/6) =$ **1050** g.
- Assume equal portions of rice per person.

3.3

- $1 + 3 + 4 = 8$ parts, so one part is $72 \div 8 = \$9$.
- \$**9**, \$**27**, \$**36**.

3.4

- Real distance $= 7 \times 25\,000 = 175\,000$ cm.
- $175\,000$ cm $= 1750$ m $=$ **1.75** km.