

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 $3u = \mathbf{24}$ and $4u = \mathbf{32}$.

2.4

- The scale multiplier is $8/5$: $R = 200(8/5) = \mathbf{320}$ 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 $R = 2(2) = \mathbf{4}$ 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 $m_2 = m_1(n_2/n_1)$.
- $m_2 = 450(14/6) = \mathbf{1050}$ g.
- Assume equal portions of rice per person.