

Answers

Section A: Linear Scale Factors

- Q1** LSF = 2 so the larger height is 6 cm
- Q2** LSF = 0.4 so the smaller breadth is 6 cm
- Q3** Yes, because $16 \div 12 = 10 \div 7.5$
- Q4** No, because $8 \div 12 \neq 6 \div 10$

Section B: Area Scale Factors

- Q5** ASF = $3^2 = 9$ so shape B has area $9 \times 8 = 72 \text{ cm}^2$
- Q6** LSF = 0.8 so ASF = $0.8^2 = 0.64$
Area of the smaller flag = $0.64 \times 2.5 = 1.6 \text{ m}^2$
- Q7** ASF = $1024 \div 400 = 2.56$ so square root to obtain LSF = 1.6
- Q8** No, because $(40 \div 30)^2 \neq 750 \div 450$

Section C: Volume Scale Factors

- Q9** LSF = 1.5 so VSF = $1.5^3 = 3.375$
Volume of the larger ornament = $3.375 \times 1800 = 6075 \text{ cm}^3$
- Q10** VSF = $(24 \div 36)^3$ so the volume of the smaller container is 16 litres
- Q11** ASF = $32 \div 8 = 4$, so LSF = 2 and VSF = $2^3 = 8$
Larger volume = $8 \times 150 \text{ ml} = 1200 \text{ ml}$ (or 1.2 litres)
- Q12** Yes, because $(2.1 \div 1.4)^3 = 12.15 \div 3.6$