

Reasoning and Problem Solving

Calculating Scale Factors

Developing

- 1a. Scale factor of 4
- 2a. No, 2cm has been multiplied by 2 to give 4cm, then should have been multiplied by 4 again to give 8cm.
- 3a. A scale factor of 2 has been used.
 $16\text{cm} \times 2 = 32\text{cm}$

Expected

- 4a. Scale factor of 1.5
- 5a. No because shape A has been enlarged to create shape B using a scale factor of 3. Shape C would have a length of $3 \times 3 = 9\text{cm}$.
- 6a. Scale factor of 1.5. The perimeter of the original shape is 16cm. $16 \times 1.5 = 24$

Greater Depth

- 7a. Scale factor of 2.5
- 8a. Yes because shape A has been enlarged to create shape B using a scale factor of 2.
- 9a. Scale factor of 4.5. The length of the shape is 7cm. $31.5 \div 7 = 4.5$

Reasoning and Problem Solving

Calculating Scale Factors

Developing

- 1b. Scale factor of 5
- 2b. Yes, 1cm has been multiplied by 3 to give 3cm, then should be multiplied by 3 again to give 9cm.
- 3b. A scale factor of 3 has been used.
 $15\text{cm} \times 3 = 45\text{cm}$

Expected

- 4b. Scale factor of 2.5
- 5b. No because Shape B has been enlarged using a scale factor of 4, so shape C would need to have a side of $4 \times 4 = 16\text{cm}$.
- 6b. Scale factor of 3.5. The perimeter of the original shape is 14cm. $14 \times 3.5 = 49$

Greater Depth

- 7b. Scale factor of 1.5
- 8b. No because shape A has been enlarged to create shape B using a scale factor of a 1.5. Shape C would have a length of 5.4cm.
- 9b. Scale factor of 2.5. The area of the original shape is 16cm^2 with sides of 4cm. In order to get an area of 100cm^2 , the sides increase to 10cm. $10 \div 4 = 2.5$.