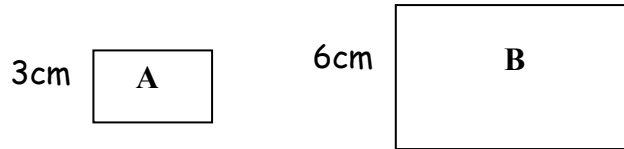


Scale factors



1. What is the scale factor of enlargement from A to B? **S.F. 2**
If the area of A is 15cm^2 , what is the area of B? **60cm^2**
2. A square of area 9cm^2 is enlarged. The new square has area 81cm^2 . What is the scale factor of enlargement? **S.F. 3**
3. A triangle of area 4cm^2 is enlarged. The enlarged triangle has an area of 16cm^2 . What is the scale factor of enlargement? **S.F. 2**
4. A trapezium with base 2cm long and area 2cm^2 is enlarged. The new area is 4.5cm^2 . What is the base length of the enlarged shape? **$1.5 \times 2 = 3\text{cm}$**
5. A cuboid measures 2cm by 3cm by 5cm.
 - a) What is the volume of this cuboid? **30cm^3**
 - b) It is enlarged by a scale factor of 2. Write down the new dimensions.
4cm by 6cm by 10cm
 - c) Calculate the volume of the enlarged cuboid. **240cm^3**
 - d) What is the scale factor of the volumes? **S.F. 8**
6. The formula for the volume of a sphere is $(4/3) \times \pi r^3$. Calculate the volume of a sphere of radius 2cm. Enlarge the sphere by scale factor 3. What is the volume of the enlarged sphere. **33.51cm^3** **904.78cm^3**
7. A cube with volume 3cm^3 is enlarged. The enlarged cube has a volume of 81cm^3 . What is the scale factor of enlargement? **S.F. 3**
8. The formula for the volume of a pyramid is $(1/3) \text{ base} \times \text{height}$. A square based pyramid with base 8cm^2 and volume 8cm^3 is enlarged. The new pyramid has volume 4096cm^3 . What is the base size of the new pyramid? **512cm^3**

$$\begin{aligned} 4096 \div 8 &= 512 \\ \sqrt{512} &= 8 && \text{so S.F. 8} \\ 8 \times 8^2 &= 512\text{cm}^3 \end{aligned}$$