

Chapter 8: Proportions

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Notes 8.3 – 3D Objects

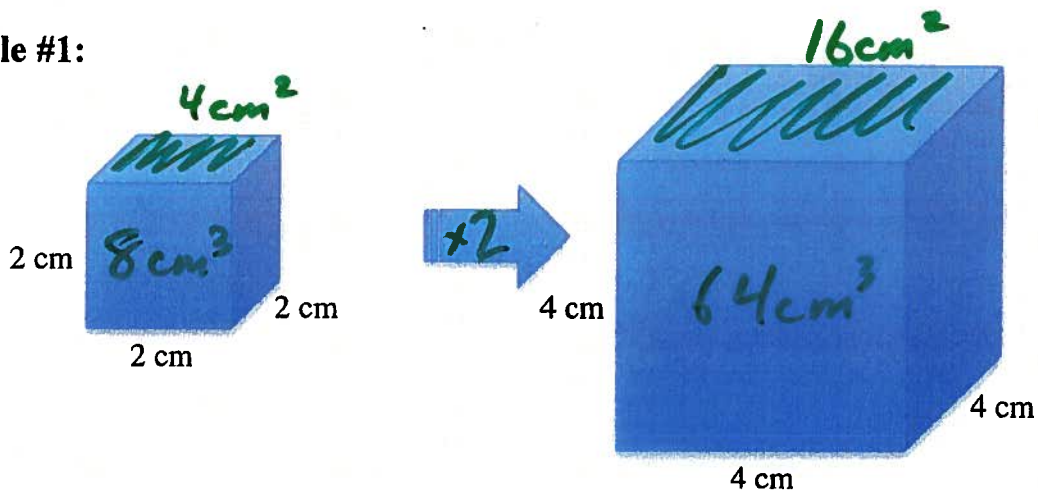
Summary

When scaling any object, each dimension changes according to the scale factor.

When scaling any object, the area of any part of the object changes according to the scale factor twice or squared.

When scaling any object, the volume of any part of the object changes according to the scale factor thrice or cubed.

Example #1:



a) What scale factor was used to scale this 3D object? $\times 2$

b) By what factor did the surface area increase?

$$\underline{\times 2 \times 2 = 2^2 = 4}$$

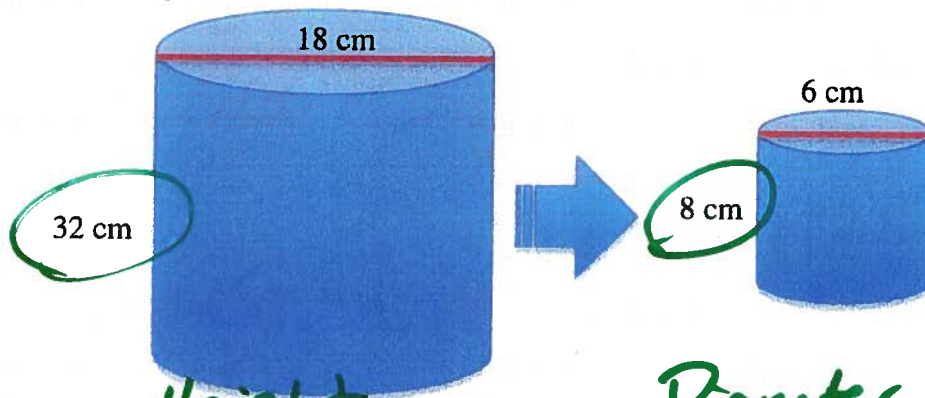
c) By what factor did the volume increase?

$$\underline{\times 2 \times 2 \times 2 = 2^3 = 8}$$

Definition

Similar object: scaled by the SAME factor in each dimension.

Example #2: Was this scale diagram done correctly? In other words, are these two objects "similar"?



Height

$$\frac{8}{32}$$

.25

≠

Diameter

$$\frac{6}{18}$$

.33

NOT SIMILAR