Similar Solids

Today I Can

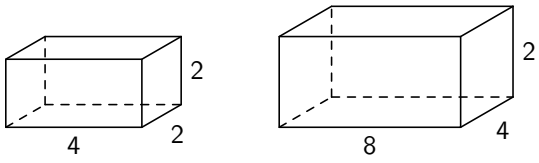
1. Compare and find areas and volumes of similar solids

Similar Solids

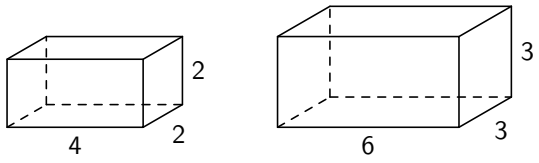
Solids that have the same shape and their corresponding dimensions are *proportional*.

Example 1. Determine whether each are similar.

(a)



(b)



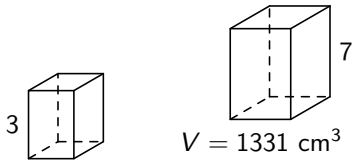
Areas and Volumes of Similar Solids

If the scale factor of two similar solids is $a : b$

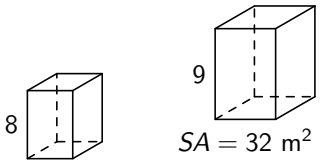
- Surface Areas
  - $a^2 : b^2$
  - (scale factor)^2
- Volumes
  - $a^3 : b^3$
  - (scale factor)^3

Example 2. Find the ratios of surface areas and ratios of volumes for each.

(a)



(b)



Example 3. The solid is similar to a larger solid with the given scale factor.

Find the surface area and volume of the larger solid.

Scale Factor $= 1 : 4$