

Scaling Solids Notes

Review from
Similarity

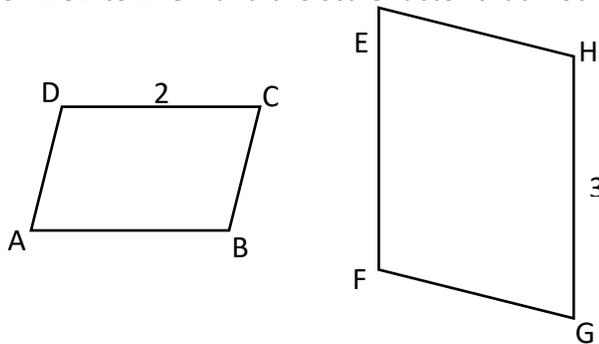
Two figures are similar if all corresponding side lengths are _____ .

If two figures are similar, then there must be a _____ that takes each side length to the corresponding side length on the dilated figure.

To find the scale factor, you take the ratio of corresponding _____ .

Example:

- The figures ABCD and EFGH below are similar, find the scale factor that would take ABCD to EFGH and the scale factor that would take EFGH to ABCD.



Scale Factors:

$ABCD \rightarrow EFGH$:

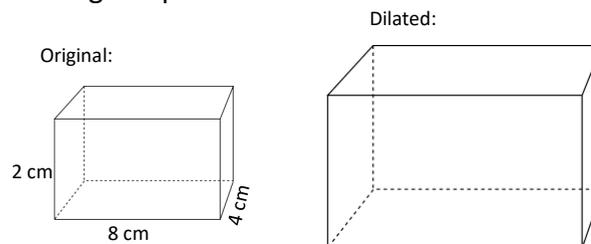
$EFGH \rightarrow ABCD$:

Scale Factors
for Solids

If a solid figure is dilated by a scale factor k :

- The figure's surface area is dilated by a factor of _____ .
- The figure's volume is dilated by a factor of _____ .

Example: Each of the dimensions of the original rectangular prism was dilated by a scale factor of 2. Find the volume and surface area of both the original and the dilated rectangular prism.



	Original	Dilated
Volume		
Surface Area		

Finding Scale Factors of Solids

Scale factor is a ratio of corresponding _____ of proportional figures.

Area scale factor is a ratio of _____ of proportional figures.

Volume scale factor is a ratio of _____ of proportional solids.

How to Convert Between Scale Factors:

Scale Factor: k

Area Scale Factor: k^2

Volume Scale Factor: k^3

Example: A cylinder was dilated. The original cylinder had a surface area of 40π cm² and the dilated cylinder has a surface area of $1,000\pi$ cm².

1. Draw two cylinders (one is the original and one is dilated)

2. Given that the original cylinder had a volume of 72π cm³, find the volume of the dilated cylinder.

