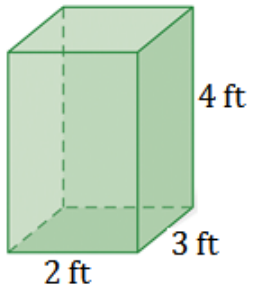
TOPIC 15-3: CHANGING DIMENSIONS IN 3-D

EXAMPLE 1: Find the surface area of the rectangular prism below.

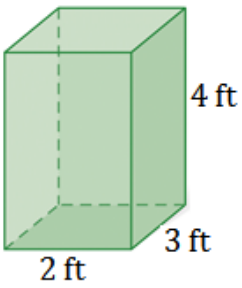


If the length, width, and height are all doubled, describe the effect on the surface area.

New SA: **SA x F x F** → **SA x ___ x ___**

# of dimensions

EXAMPLE 2: Find the volume of the rectangular prism below.



If the length, width, and height are all doubled, describe the effect on the volume.

New Volume: **V x F x F x F** → **V x ___ x ___ x ___**

# of dimensions

Now Let's Explore!

If the radius and height of a cylinder are multiplied by $\frac{1}{2}$, describe the effect on the volume.

A pyramid has a total area of 112 squared inches. Find its total area if its dimensions were increased to four times their original length.

ALL of the dimensions of a figure are not always changed, nor are they ***ALL*** always changed by the same factor.

If the height of a cylinder is doubled, how will the volume change?

If the height of a cylinder remains the same, but the radius is reduced to one-third its original length, how will the volume change?

The volume of a rectangular pyramid is 400 in^3. If the first dimension is reduced by one-fourth, the second dimension is reduced by half, and the third dimension is tripled, by what factor will the volume be affected?