

Do-now:

The length and width of a rectangular prism are 7 inches and 5 inches, respectively. What is the height of the prism if the volume is 70 cubic inches?

$$V = Lwh$$

$$70 = 7 \cdot 5 \cdot h$$

$$70 = 35h$$

$$2 = h$$

The volume of a rectangular pool is 1,080 cubic meters. Its length, width, and depth are in the ratio of 10:4:1. Find the number of meters in each of the three dimensions of the pool.

$$V = Lwh$$

$$1080 = 10x \cdot 4x \cdot 1x$$

$$1080 = 40x^3$$

$$27 = x^3$$

$$3 = x$$

$$\begin{array}{ccc} 10x & 4x & 1x \\ L & W & h \end{array}$$

$$\boxed{30, 12, 3}$$

If the length of a rectangular prism is tripled, and the height is also tripled, but the width remains the same, how will the volume of the figure be affected?

$$V = lwh \rightarrow V = \overset{3 \cdot l \cdot 3 \cdot h \cdot w}{\underset{3 \cdot 3 \cdot l \cdot h \cdot w}{3l \cdot 3h \cdot w}} = 9lwh$$

The volume of a cube is 729 cubic inches.
What is the length of one of the sides?

$$V = \underbrace{Lwh}_{\text{are the same!}}$$

$$V = s^3$$

$$729 = s^3$$

$$9 = s$$

