

Example: Volume of a Triangular Prism**Problem:**

Find the volume of this triangular prism. The triangle is an isosceles triangle with base 10 inches and two sides with length 13 inches.

Solution:

To find the volume, we must first identify the base. Recall that the bases of a figure are the same size and shape and are parallel to each other. This figure is actually turned sideways, because the base is the isosceles triangle.

We are going to need to know the height of this triangle. Recall the property of an isosceles triangle, that if you draw in the height, it bisects the isosceles triangle and makes a right triangle.

We can use the Pythagorean Theorem to find the height of the triangle.

$5^2 + h^2 = 13^2$

Simplify and solve this equation. We get that $h = 12$.

Now that we know the height of the triangle, we can find the area.

The area of a triangle is one-half base times height. In this case, this is one-half times 10 times 12, which equals 60.

To find the volume of the figure, we need to multiply the area of the base times the height. The term 'height' gets a little confusing. The height of the figure is different than the height of the triangle. The height of the figure is the distance between the two bases. Take a look at the figure again and see that the distance between the triangular bases is 8.

Volume equals the area of the base times the height.

In this case, we found the area of the base to be 60 and the height of the figure to be 8, so the volume is 480.

And, as always, we remember to label the answer. The volume of this triangular prism is 480 inches cubed.