

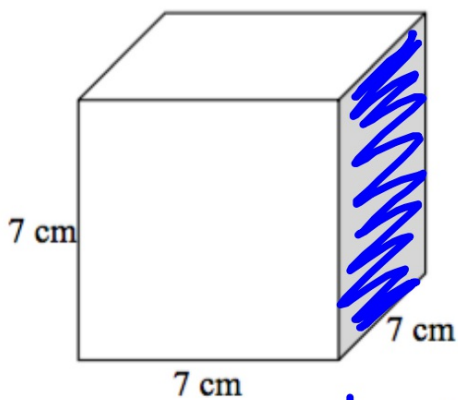
9.3 EQ: **How DO YOU FIND THE VOLUME OF A PRISM?**

Volume of a prism or cylinder = the product of the area of the base (β) and the height (note: volume is measured in cubic units)

$$V = \beta h$$

Example 1:

Find the volume of the cube with side length 7 cm.



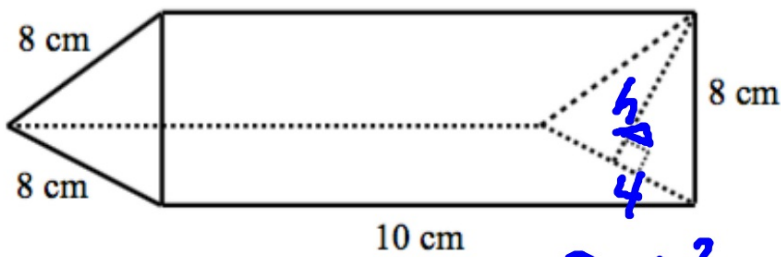
$$\beta = L \cdot W$$

$$V = \beta \cdot h$$

$$= (7 \cdot 7) \cdot 7 = 343 \text{ cm}^3$$

Example 2:

Find the volume of the prism below. Round your answer to the nearest hundredth.



$$V = B \cdot h$$

$$= \left(\frac{1}{2} \cdot 8 \cdot \sqrt{48}\right) \cdot 10$$

$$= \boxed{277.13 \text{ cm}^3}$$

$$B = \frac{1}{2} b \cdot h_{\Delta}$$

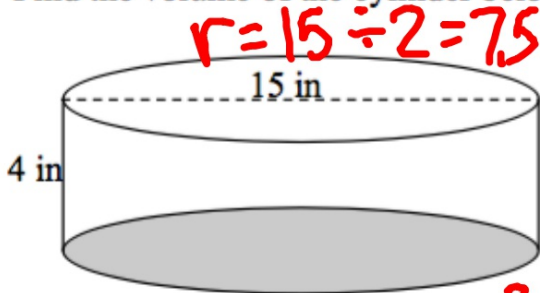
$$4^2 + h^2 = 8^2$$

$$16 + h^2 = 64$$

$$h^2 = 48 \rightarrow h = \sqrt{48}$$

Example 3:

Find the volume of the cylinder below. Leave your answer in terms of π .



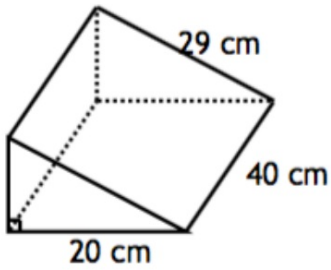
$$V = B \cdot h$$

$$= \pi (7.5)^2 \cdot 4 = \boxed{225\pi \text{ in}^3}$$

$$B = \pi r^2$$

Example 4:

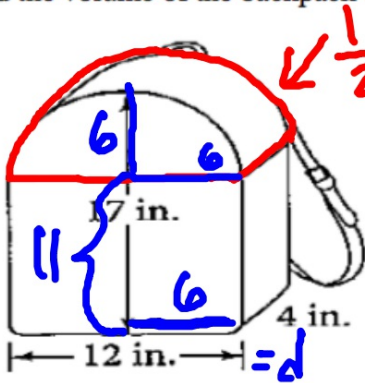
Find the volume of the prism below.



$$8400 \text{ cm}^3$$

Example 5:

Find the volume of the backpack below. Round your answer to the nearest hundredth.



$\leftarrow \frac{1}{2}$ of a cylinder

$$V_{\frac{1}{2} \text{CYL}} = 72\pi$$

$$V_{\text{PRISM}} = 528$$

$$V_{\text{TOTAL}} = 754.19 \text{ in}^3$$

Summary: