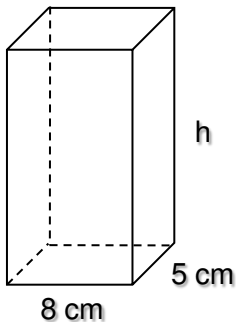


VOLUME

ANSWERS

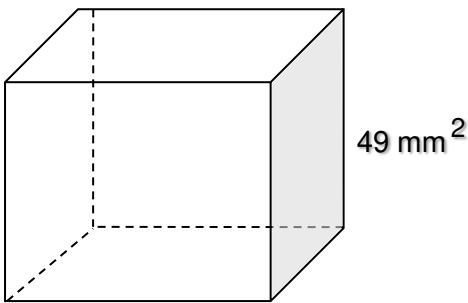
Solve the problems.

1. A rectangular prism of volume $2,400 \text{ cm}^3$ has a rectangular base of length 8 cm and width 5 cm. Find the height (h) of the prism.



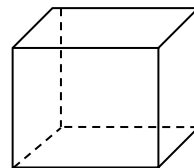
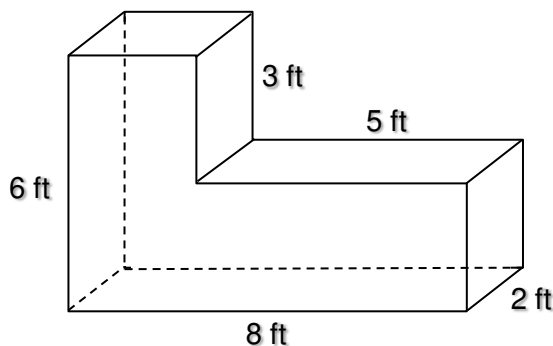
$$\begin{aligned}8 \times 5 \times h &= 2,400 \\40h &= 2,400 \\h &= 60 \text{ cm}\end{aligned}$$

2. The area of one square face of a cube is 49 mm^2 . Find the volume of the cube.

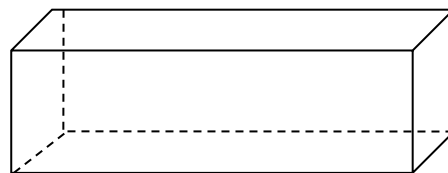


$$\begin{aligned}l \times w &= \text{area} & w \times l \times h &= \text{volume} \\l \times w &= 49 & 7 \times 7 \times 7 &= \text{volume} \\7 \times 7 &= 49 & 7 \times 7 \times 7 &= 343 \\& & \text{volume} &= 343 \text{ mm}^3\end{aligned}$$

3. Find the volume of the given L-shaped rectangular figure. Helpful hint: Separate the shape into two different shapes then add them back together.



$$3 \times 2 \times 3 = 18 \text{ ft}^3$$

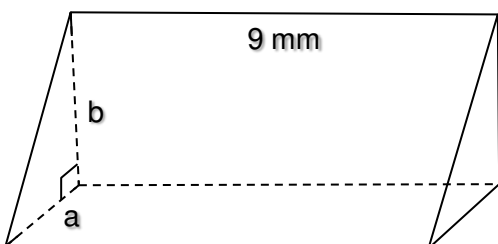


$$8 \times 2 \times 3 = 48 \text{ ft}^3$$

Total Volume:

$$18 + 48 = 66 \text{ ft}^3$$

4. The triangular base of a prism is a right triangle with legs a and b . Side b is twice as long as side a . The height (h) of the prism is 9 mm and its volume is 81 mm^3 . Find the lengths of sides a and b of the triangle.



$$\begin{aligned}\frac{1}{2} \times (a \times b) \times 9 &= 81 \text{ mm}^3 \\ \frac{1}{2} \times (a \times b) &= 9 \\ b &= 2a \\ \frac{1}{2} \times (a \times 2a) &= 9 \\ a^2 &= 9\end{aligned}$$

$$a = 3 \text{ mm}$$

$$b = 6 \text{ mm}$$