

8.4 Volumes of Rectangular Prisms

Name _____

I can use the mathematical formula to determine the volume of real world objects.

Notes:

The **volume** of a three-dimensional figure is a measure of the amount of space that it occupies. Volume is measured in cubic units.

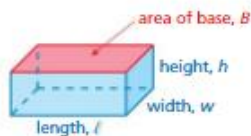


Key Idea

Volume of a Rectangular Prism

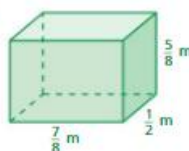
Words The volume V of a rectangular prism is the product of the area of the base and the height of the prism.

Algebra $V = Bh$ or $V = \ell wh$



Find the volume of each prism.

a.



$$\begin{aligned} V &= \ell wh \\ &= 7\left(\frac{1}{2}\right)\left(\frac{5}{8}\right) \\ &= \frac{35}{128} \end{aligned}$$

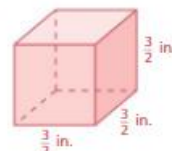
Write formula.

Substitute values.

Multiply.

So, the volume is $\frac{35}{128}$ cubic meter.

b.

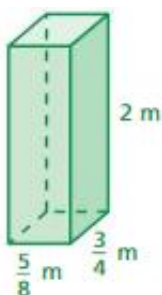


$$\begin{aligned} V &= \ell wh \\ &= 3\left(\frac{3}{2}\right)\left(\frac{3}{2}\right) \\ &= \frac{27}{8} \\ &= 3\frac{3}{8} \end{aligned}$$

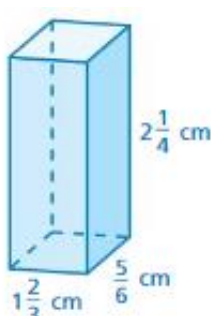
So, the volume is $3\frac{3}{8}$ cubic inches.

Find the volume of the prism.

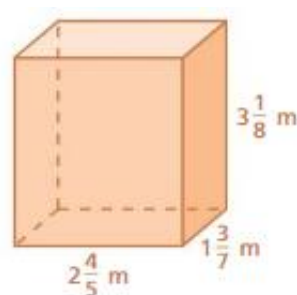
7.



8.



9.



Write and solve an equation to find the missing dimension of the prism.

10. Volume = 1620 cm^3



11. Volume = 220.5 cm^3



12. Volume = 532 in.^3

