

Lesson 14: Volume in the Real World

Classwork

Example 1

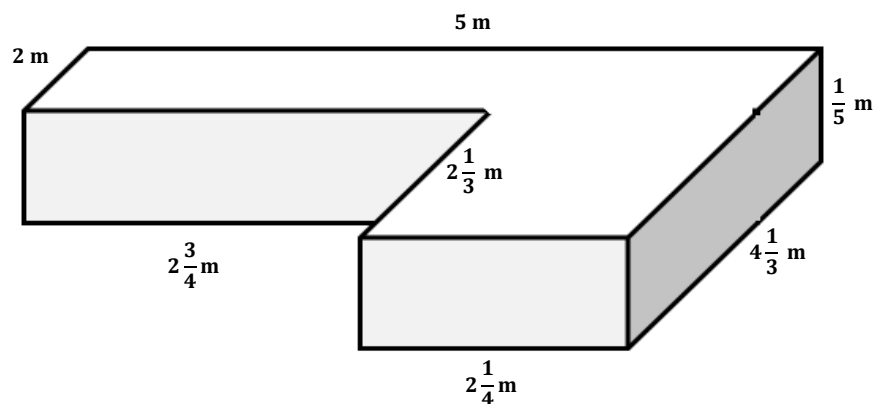
- a. The area of the base of a sandbox is $9\frac{1}{2}$ ft². The volume of the sandbox is $7\frac{1}{8}$ ft³. Determine the height of the sandbox.



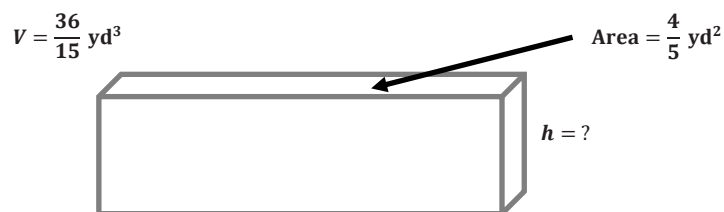
- b. The sandbox was filled with sand, but after kids played, some of the sand spilled out. Now, the sand is at a height of $\frac{1}{2}$ ft. Determine the volume of the sand.

Example 2

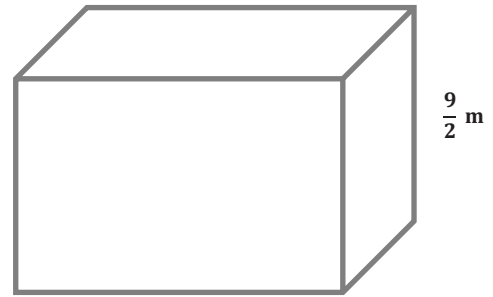
A special order sandbox has been created for children to use as an archeological digging area at the zoo. Determine the volume of the sandbox.

**Exercises**

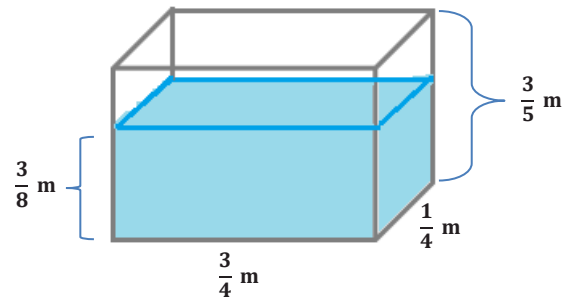
1.
 - a. The volume of the rectangular prism is given. Determine the missing measurement using a one-step equation.



- b. The volume of the box is $\frac{45}{6} \text{ m}^3$. Determine the area of the base using a one-step equation.



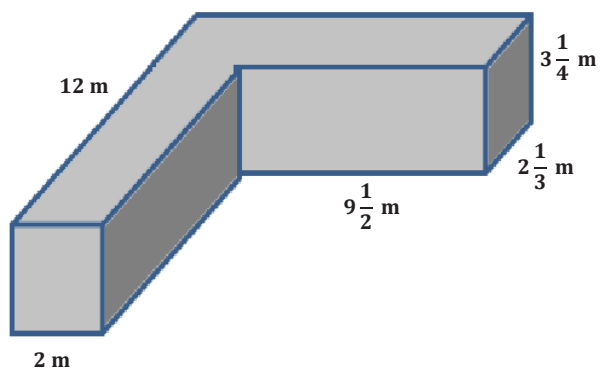
2. Marissa's fish tank needs to be filled with more water.
- a. Determine how much water the tank can hold.



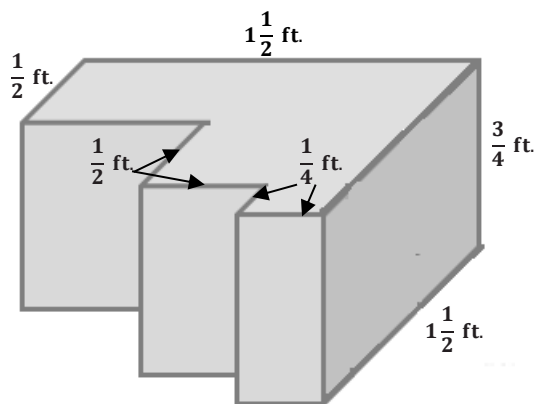
- b. Determine how much water is already in the tank.
- c. How much more water is needed to fill the tank?

3. Determine the volume of the composite figures.

a.

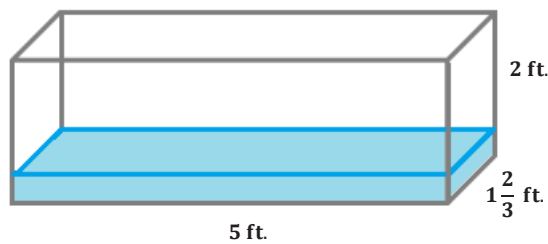


b.

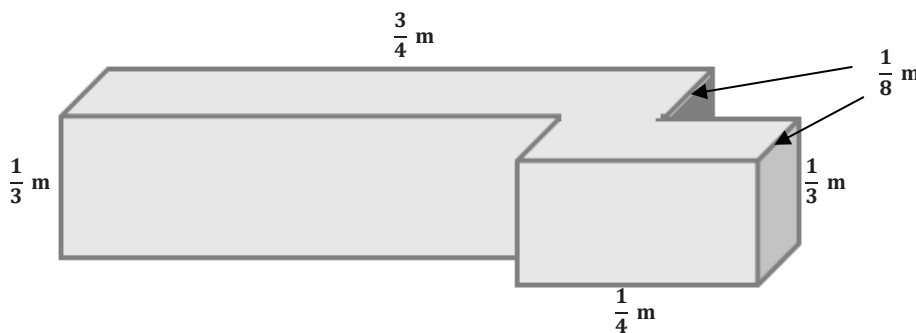


Problem Set

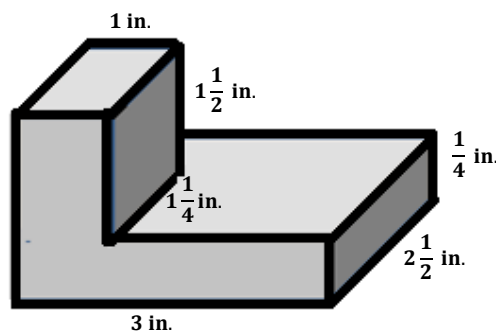
- The volume of a rectangular prism is $\frac{21}{12}$ ft³, and the height of the prism is $\frac{3}{4}$ ft. Determine the area of the base.
- The volume of a rectangular prism is $\frac{10}{21}$ ft³. The area of the base is $\frac{2}{3}$ ft². Determine the height of the rectangular prism.
- Determine the volume of the space in the tank that still needs to be filled with water if the water is $\frac{1}{3}$ ft. deep.



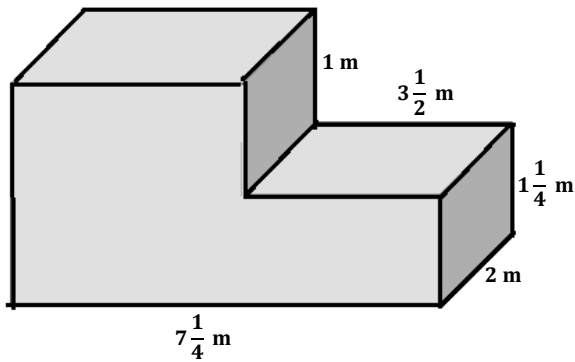
- Determine the volume of the composite figure.



- Determine the volume of the composite figure.



6.



- Write an equation to represent the volume of the composite figure.
- Use your equation to calculate the volume of the composite figure.