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.



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Lesson 14 6•5

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.





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b. The volume of the box is $\frac{45}{6}$ m³. Determine the area of the base using a one-step equation.



- $\frac{3}{8} \text{ m} \left\{ \begin{array}{c} & & & \\ & & & & \\ & & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & &$
- 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?



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S.73



3. Determine the volume of the composite figures.

a.

b.







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 $\frac{3}{4}$ ft.

 $1\frac{1}{2}$ ft.

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S.74

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. 1.
- 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 2. 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. 3.



Determine the volume of the composite figure. 4.



5. Determine the volume of the composite figure.





Lesson 14:

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S.75

Date:







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





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