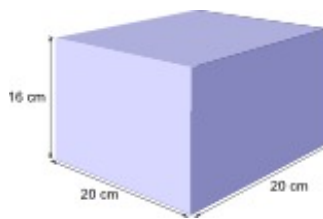


6.G Computing Volume Progression 2

Task

a. Amy has a fish tank shaped like a rectangular prism that is 20 cm by 20 cm by 16 cm. What is the volume of the tank?



b. If Amy only fills the tank $\frac{3}{4}$ of the way, what will be the volume of the water in the tank?

IM Commentary

This is the second in a series of four tasks that gradually build in complexity. The purpose of this series of tasks is to build in a natural way from accessible, concrete problems involving volume to a more abstract understanding of volume. In this iteration, we do away with the lines that delineate individual unit cubes (which makes it more abstract) and generalize from cubes to rectangular prisms. However, the calculations are the same as in 6.G Computing Volume Progression 1.

Solution

a. $V = lwh = 20 \times 20 \times 16 = 6400 \text{ cm}^3$.

b. If Amy fills the tank $\frac{3}{4}$ of the way, the height of the water in the tank will be $\frac{3}{4} \times 16 = 12 \text{ cm}$, while the width and the length remain unchanged. So the volume of the water will be: $V = lwh = 20 \times 20 \times 12 = 4800 \text{ cm}^3$.



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