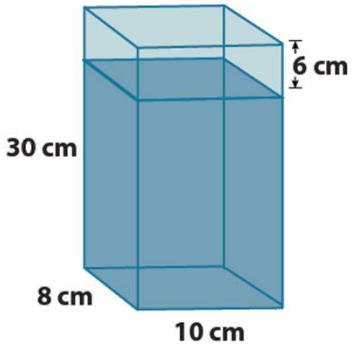
Prism Word Problems Worksheets

A glass container is in the form of a right rectangular prism. The container is $10\ cm$ long, $8\ cm$ wide, and $30\ cm$ high. The top of the container is open, and the base and walls of the container are $3\ mm$ (or $0.3\ cm$) thick. The water in the container is $6\ cm$ from the top of the container. What is the volume of the water in the container?



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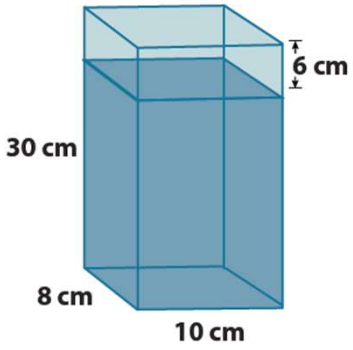

Because of the walls and base of the container, the water in the container forms a right rectangular prism that is $9.4\ cm$ long, $7.4\ cm$ wide, and $23.7\ cm$ tall.

$$V = Bh$$

$$V = (lw)h$$

$$V = (9.4\ \text{cm} \cdot 7.4\ \text{cm}) \cdot 23.7\ \text{cm}$$

$$V = \left(\frac{94}{10}\ \text{cm} \cdot \frac{74}{10}\ \text{cm}\right) \cdot \frac{237}{10}\ \text{cm}$$

$$V = \left(\frac{6,956}{100}\ \text{cm}^2\right) \cdot \frac{237}{10}\ \text{cm}$$

$$V = \frac{1,648,572}{1,000}\ \text{cm}^3$$

$$V = 1,648.572\ \text{cm}^3$$

The volume of the water in the container is $1,648.6\ \text{cm}^3$.