

Volume of Rectangular Prisms Worksheets

1. A rectangular tank with a base area of 24 cm^2 is filled with water and oil to a depth of 9 cm. The oil and water separate into two layers when the oil rises to the top. If the thickness of the oil layer is 4 cm, what is the volume of the water?

2. Two rectangular prisms have a combined volume of 432 cubic feet. Prism A has half the volume of Prism B.

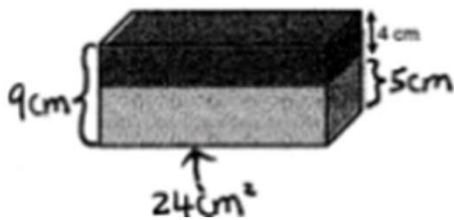
a. What is the volume of Prism A? Prism B?

b. If Prism A has a base area of 24 ft^2 , what is the height of Prism A?

c. If Prism B's base is $\frac{2}{3}$ the area of Prism A's base, what is the height of Prism B?

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$$24 \text{ cm}^2 \times 5 \text{ cm} = 120 \text{ cm}^3$$

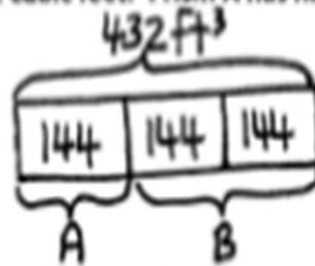
The volume of the water is 120 cm^3 .

Two rectangular prisms have a combined volume of 432 cubic feet. Prism A has half the volume of Prism B.

B.

a. What is the volume of Prism A? Prism B?

The volume of Prism A is 144 ft^3 ,
The volume of Prism B is 288 ft^3 .



$$\begin{array}{r} 144 \\ 3 \overline{) 432} \\ \underline{-3} \\ 13 \\ \underline{-12} \\ 12 \\ \underline{-12} \\ 0 \end{array}$$

b. If Prism A has a base area of 24 ft^2 , what is the height of Prism A?

$144 \div 12 = 12$, so $144 \div 24 = 6$. The height of prism A is 6 ft .

c. If Prism B's base is $\frac{2}{3}$ the area of Prism A's base, what is the height of Prism B?

$$\frac{2}{3} \times 24 = \frac{2 \times 24}{3} = 16$$

$$288 \text{ ft}^3 \div 16 \text{ ft}^2 = 18 \text{ ft}$$

The height of prism B is 18 ft .