

Geometry

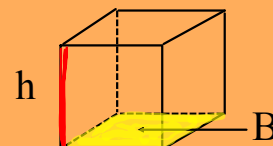
Ch. Handout 11.4

Volumes of Prisms and Cylinders

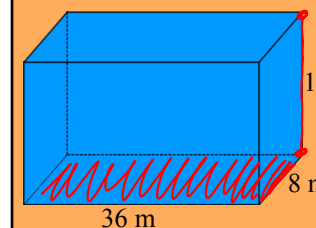
Volume of a Prism

The volume of a prism is the product of the area of a base and the height of the prism.

$$V = Bh$$



Find the volume of the prism.



$$h = 12$$

$$B = 36(8) = 288$$

$$V = Bh$$

$$= 288(12)$$

$$V = 3456 \text{ m}^3$$

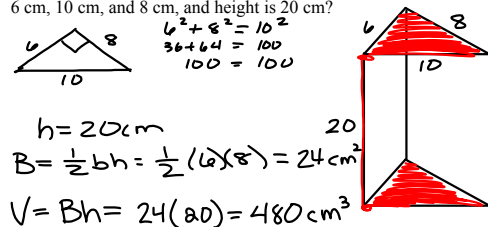
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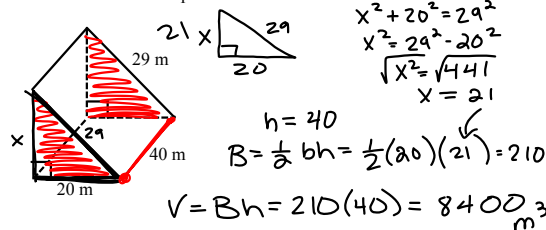
Volume of a Triangular Prism

What is the volume of the triangular prism, whose sides of the base are 6 cm, 10 cm, and 8 cm, and height is 20 cm?

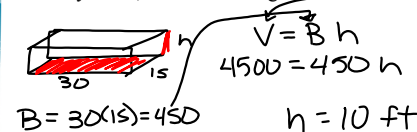


Practice

Find the volume of the prism.



The volume of a rectangular prism is 4500 ft^3 . If the base is 15 ft by 30 ft., what is the height?



Volume of a Triangular Prism

Practice

Practice

Volume of a Cylinder

The volume of a cylinder is the product of the area of the base and the height of the cylinder.

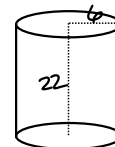
$$V = Bh = \pi r^2 h$$

Volume of a Cylinder

What is the volume of the cylinder, whose radius is 6 cm and height is 22 cm?

$$= \pi (6)^2 = 36\pi$$

22



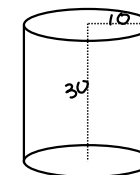
$$V = Bh = 36\pi (22) = 792\pi \text{ cm}^3$$

Practice

What is the volume of the cylinder, whose radius is 10 cm and height is 30 cm? Leave your answer in terms of π .

$$\text{Base area: } \pi r^2 = \pi (10)^2 = 100\pi$$

Height: 30



$$\text{Volume: } V = Bh = 100\pi (30) = 3000\pi \text{ cm}^3$$

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Volume of a Cylinder

Practice

Check Your Understanding

1 What is the volume of the cylinder?

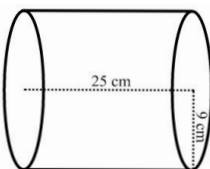
$$h = 25$$

$$B = \pi (9)^2 = 81\pi$$

$$V = Bh$$

$$= 81\pi (25)$$

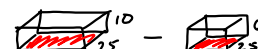
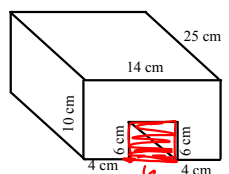
$$= 2025\pi$$

A 225 cm³B 1413 cm³C 2025 cm³
☒ D 6358.5 cm³


Select the correct answer.

Check Your Understanding

Find the volume of the composite space figure.



$$14(25)(10) - 6(25)(6)$$

$$3500 - 900$$

$$V = 2600 \text{ cm}^3$$

Check Your Understanding

Check Your Understanding

John is building a new house. He plans to have a pillar on one of the corners, which is of cylindrical shape with a diameter of 30 cm and a height of 2.5 m. What is the volume of reinforced concrete mixture he should use to build the pillar?



$$V = \pi r^2 h$$

$$= \pi (15)^2 (2.5)$$

$$= 56250\pi \text{ cm}^3$$

Check Your Understanding

Assignment:

Pgs 627-629 1-15, 17-19,20,22,25-27,30,31,
34-35

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