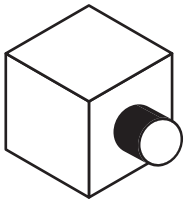


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The volume of a **composite figure** can be found by adding the volumes of the parts of the figure.



This figure is composed of a cube with edge length 10 feet and a cylinder with radius 3 feet and height 5 feet. What is the total volume of the figure?

The volume of the cube is $s^3 = 10^3 = 1,000$ cubic feet. The volume of the cylinder is $\pi r^2 h = \pi(3)^2(5) = 45\pi$ cubic feet. So the total volume is $1,000 + 45\pi \approx 1,141.3$ cubic feet.

Volume of a cube:

$$V = s^3$$

Volume of a rectangular prism:

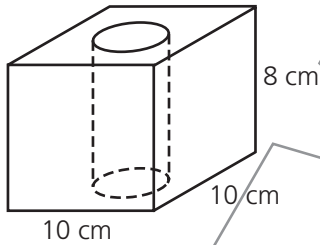
$$V = lwh$$

Volume of a cylinder:

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

Read each problem. Circle the letter of the best answer.

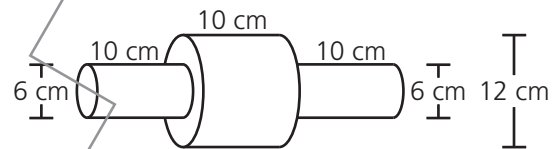
- 1 The picture shows a rectangular block of wood in which a cylindrical hole 5 centimeters in diameter has been drilled. What is the approximate volume of the remaining wood?



- A 15 cm^3 C 604 cm^3
 B 172 cm^3 D 643 cm^3

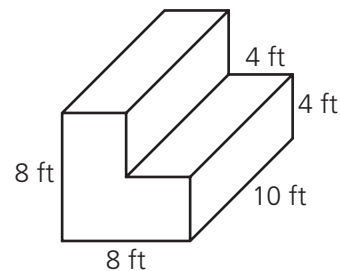
The volume of the original block of wood was $10 \cdot 10 \cdot 8 = 800$ cubic centimeters. The cylindrical hole has radius 2.5 centimeters and height 8 centimeters, so its volume is $\pi \cdot (2.5)^2 \cdot 8 \approx 157$ cubic centimeters. Subtract to find the volume remaining: $800 - 157 = 643$ cubic centimeters. The correct answer is D.

- 2 This figure is composed of three cylinders. What is the total volume of the figure?



- A $540\pi \text{ cm}^3$ C $1,620\pi \text{ cm}^3$
 B $1,080\pi \text{ cm}^3$ D $2,160\pi \text{ cm}^3$

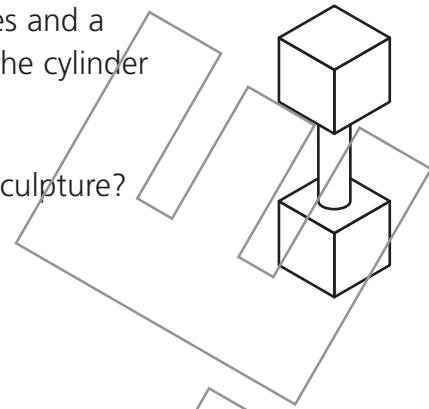
- 3 This figure is composed of two rectangular prisms. What is its volume?



- A 320 ft^3 C 640 ft^3
 B 480 ft^3 D 800 ft^3

Read each problem. Write your answers.

- 4** The sculpture shown at the right is composed of two cubes and a cylinder. The cubes measure 3 meters on each edge, and the cylinder has diameter 1 meter and height 4 meters.

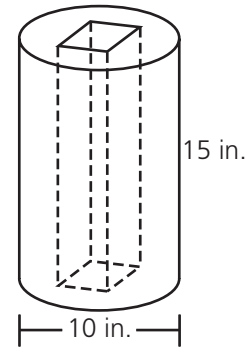


- A** To the nearest cubic meter, what is the volume of the sculpture?

Answer: _____

- B** Explain how you found your answer.

- 5** The picture shows a solid steel cylinder with diameter 10 inches and height 15 inches, with a 4-inch-by-4-inch square hole cut through the middle.



- A** What was the original volume of the cylinder before the square hole was cut out?

Answer: _____

- B** What was the volume of the remaining steel after the square hole was cut out?

Answer: _____

- C** Explain how you found your answers.
