

What's Going On?

Checking In

Minds on

Bits and Pieces

Action!

Volume of Cones and Spheres

Consolidation

Ice Cream?

Learning Goal - I will learn to calculate the volume of cones and spheres.

Checking In

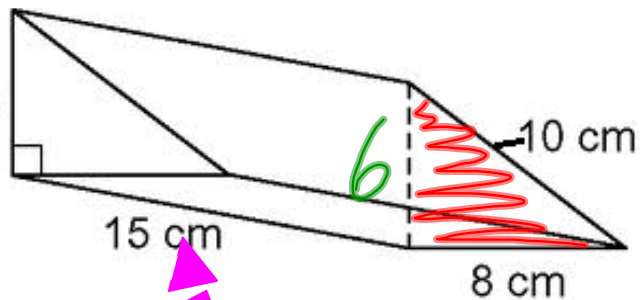
Test

Thursday

Questions from Friday Due.

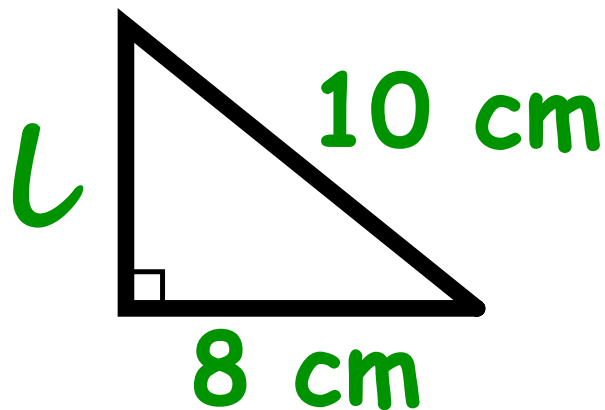


Find the volume of the solid below.



$$V = (\text{area of base}) \times \text{height}$$

The base is a right triangle.



The height is 15 cm.

To get the area of the base, we need to find the height of the triangle (l) first

Use the Pythagorean Theorem!!!

$$a^2 + b^2 = c^2$$

***Note: we have the hypotenuse (c)

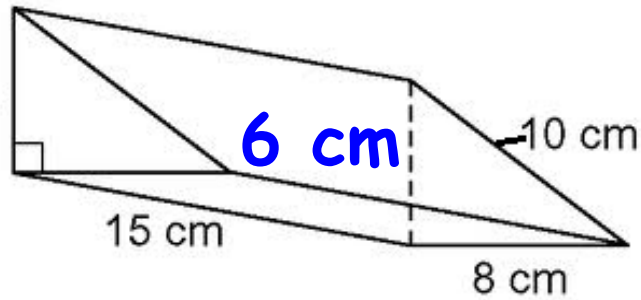
$$8^2 + l^2 = 10^2$$

$$\begin{array}{r} 64 + l^2 = 100 \\ -64 \qquad -64 \end{array}$$

$$l^2 = 36$$

$$\sqrt{l^2} = \sqrt{36}$$

$$l = 6$$



Now we can find the area of the base and therefore the volume of the **triangular** based prism!!!

$$V = (\text{area of base}) \times \text{height}$$

$$V = \frac{b \times h}{2} \times l$$

$$V = \frac{(8)(6)}{2} \times (15)$$

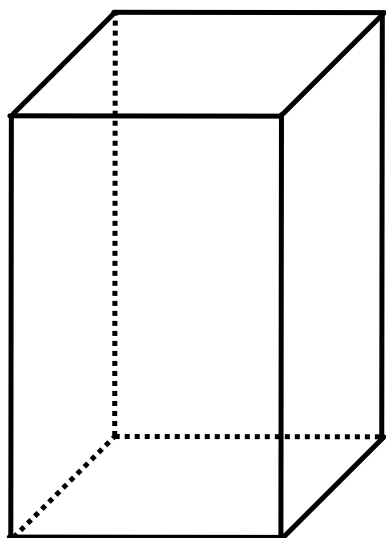
$$V = \frac{48}{2} \times (15)$$

$$V = 24 \times (15)$$

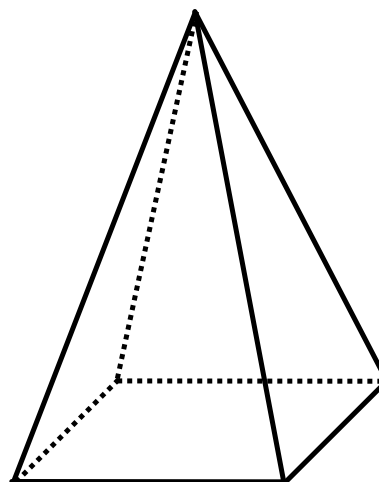
$$V = 360 \text{ cm}^3$$

Minds on

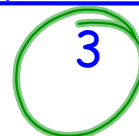
Thinking Logically



$$V = \text{area of base} \times \text{height}$$



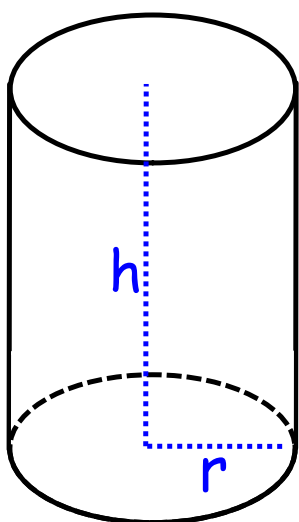
$$V = \frac{\text{area of base} \times \text{height}}{3}$$



Minds on

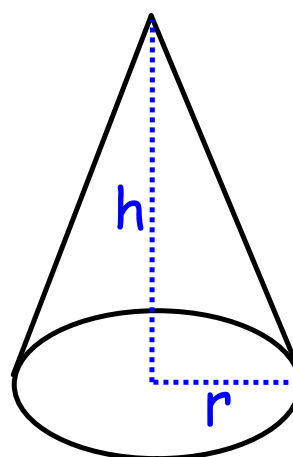
Thinking Logically

3



$$V = \pi r^2 \times \text{height}$$

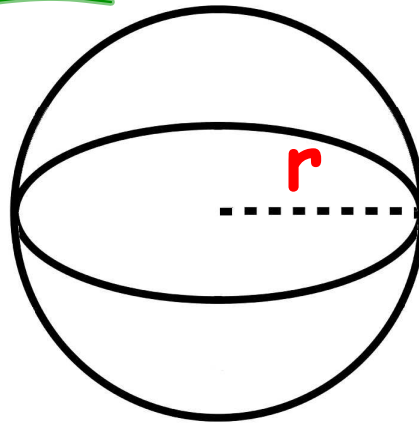
area of base



$$V = \frac{\pi r^2 \times \text{height}}{3}$$

Action!

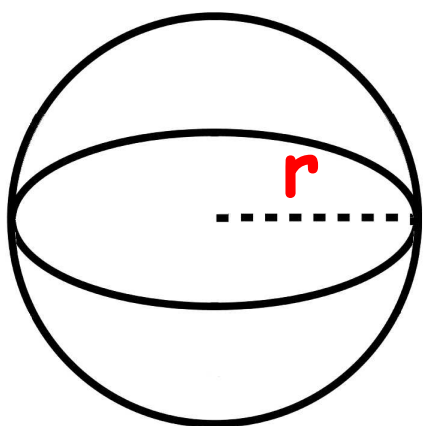
Volume of a Sphere



$$V = \frac{4}{3} \pi r^3$$

Action!

Volume of a Sphere



$$V = \frac{4}{3} \pi r^3$$



$$V = \frac{4 \pi r^3}{3}$$

$$V = \frac{4\pi r^3}{3}$$

A sphere has a radius of 6cm. What's the volume?

$$V = \frac{4\pi(6)^3}{3}$$

$$V = \frac{4 \times \pi \times 216}{3}$$

$$V = 904.78$$

$$V = \frac{4\pi r^3}{3}$$

A sphere has a diameter of 10cm. What's the volume?

$$r = 5$$

$$V = \frac{4\pi(5)^3}{3}$$

$$V = \frac{4 \times \pi \times 125}{3}$$

$$V = 523.60$$

$$V = \frac{4\pi r^3}{3}$$

A sphere has a volume of 1436.76cm^3
What's the diameter?

$$3 \times 1436.76 = \frac{4\pi r^3}{3} \times 3$$

$$\frac{4310.28}{4 \times \pi} = \frac{4\pi r^3}{4 \times \pi}$$

$$\sqrt[3]{r^3} = 343$$

$$r = 7$$

$$d = 14$$

$$\frac{6}{2 \times 3}$$

$$6 \div (2 \times 3)$$

$$6 \div 2 \div 3$$

Consolidation

Homework

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