

DO NOW

A shipping container is in the shape of a right rectangular prism with a length of 12 feet, a width of 8.5 feet, and a height of 4 feet. The container is completely filled with contents that weigh, on average, 0.25 pound per cubic foot. What is the weight, in pounds, of the contents in the container?

$$V = \textcircled{B}h$$

$$V = (12)(8.5)(4)$$

$$V = 408 \text{ ft}^3$$

$$\frac{408 \text{ ft}^3}{1} \cdot \frac{.25 \text{ lb}}{1 \text{ ft}^3}$$

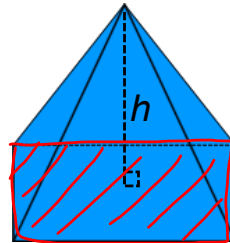
$$\boxed{102 \text{ pounds}}$$

May 6-1:03 PM

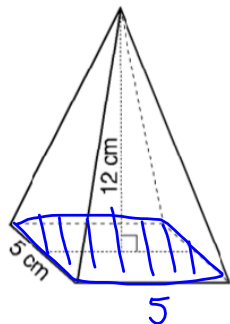
Volume of a Pyramid

$$V = \frac{1}{3} \textcircled{B} \cdot h$$

area of
base of pyramid



EX: Find the volume of the square-based pyramid below



$$V = \frac{1}{3} \textcircled{B}h$$

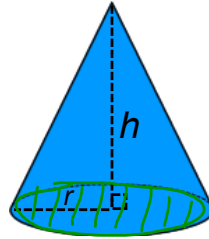
$$V = \frac{1}{3} (5)(5)(12)$$

$$\boxed{V = 100 \text{ cm}^3}$$

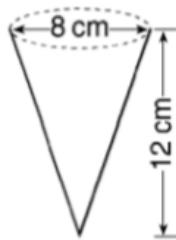
May 9-10:47 AM

Volume of a Cone

$$V = \frac{1}{3} \pi r^2 h$$



EX: What is the volume of the circular cone below (to the nearest tenth)?



$$V = \frac{1}{3} \pi r^2 h$$

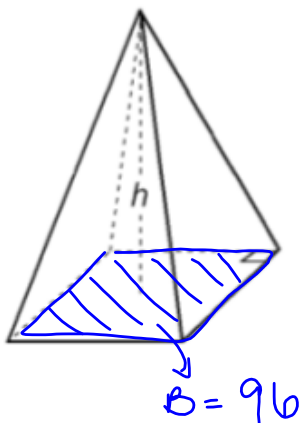
$$V = \frac{1}{3} \pi (4)^2 (12)$$

$$V = 201.06\dots$$

$$\boxed{201.1 \text{ cm}^3}$$

May 9-10:52 AM

1) If the area of the base of the square pyramid below is 96 ft^2 and the height is 8 ft , what is the volume?



$$V = \frac{1}{3} B h$$

$$\frac{1}{3} (96)(8)$$

$$\boxed{V = 256 \text{ ft}^3}$$

May 6-7:23 AM

2) The base of a pyramid is a rectangle with a width of 6 cm and a length of 8 cm. Find, in centimeters, the height of the pyramid if the volume is 288 cm^3 .

$$V = \frac{1}{3} B h$$

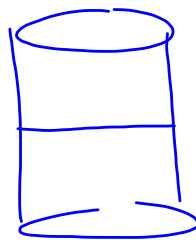
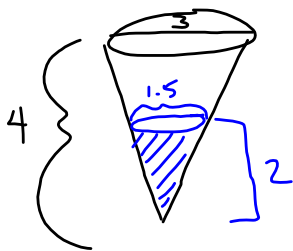
$$288 = \frac{1}{3} (6)(8) h$$

$$\frac{288}{16} = \frac{16h}{16}$$

$$18 = h$$

May 9-11:10 AM

3) A water cup in the shape of a cone has a height of 4 inches and a maximum diameter of 3 inches. What is the volume of the water in the cup, to the nearest tenth of a cubic inch, when the cup is filled to half its height?



$$V = \frac{1}{3} \pi r^2 h$$

$$V = \frac{1}{3} \pi (.75)^2 (2)$$

$$V = 1.17\dots$$

$$1.2 \text{ in}^3$$

Mar 6-9:49 AM

4) An ice cream waffle cone can be modeled by a right circular cone with a base diameter of 6.6 centimeters and a volume of 54.45π cubic centimeters. What is the number of centimeters in the height of the waffle cone?

- 1) $3\frac{3}{4}$
- 2) 5
- 3) 15
- 4) $24\frac{3}{4}$

$$V = \frac{1}{3}\pi r^2 h$$
$$\frac{54.45\pi}{\cancel{\pi}} = \frac{\frac{1}{3}\cancel{\pi}(3.3)^2 h}{\cancel{\pi}}$$
$$54.45 = \frac{1}{3}(3.3)^2 h$$
$$\frac{54.45}{3.63} = \frac{3.63 h}{3.63}$$
$$15 = h$$

Mar 6-9:51 AM