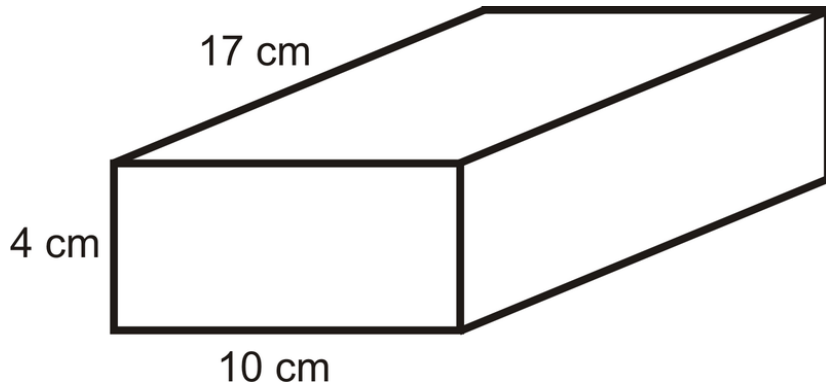


# Volume of Prisms, Pyramids, & Spheres

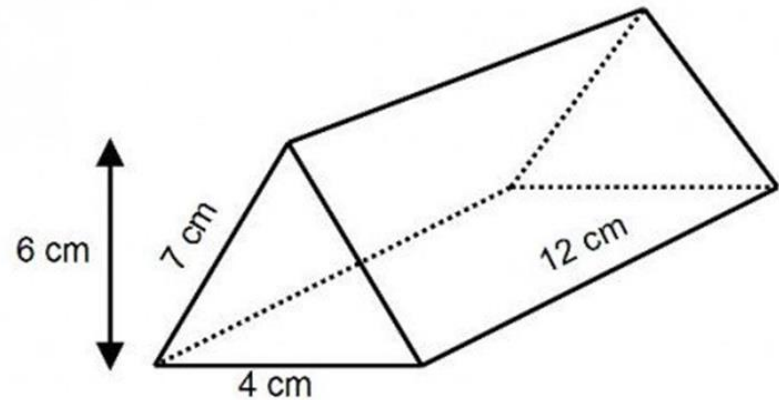
---

# Volume of Prisms

---



Rectangular Prism



Triangular Prism

# Volume (V) of a Prism

---

## Volume Formula

$$V = Bh$$

V= Volume

B= Area of the Base

h= Height of the Figure

# Volume (V) of a Prism

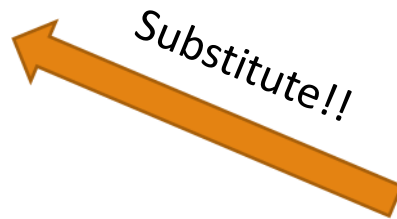
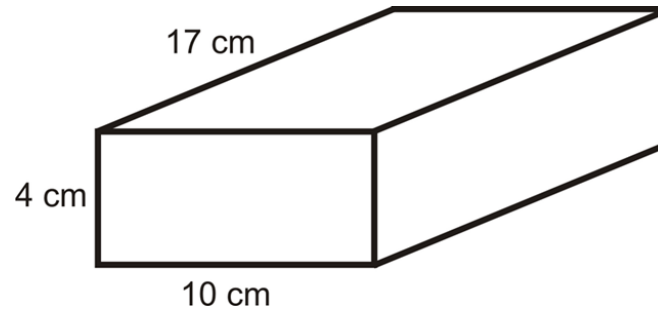
---

## Volume Formula

$$V = Bh$$

$$V = 40(17)$$

$$V = 680 \text{ cm}^3$$



$$B = bh$$

$$B = 10(4)$$

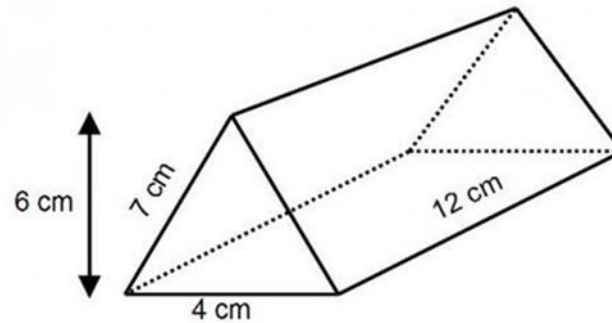
$$B = 40 \text{ cm}^2$$

$$h = 17 \text{ cm}$$

# Volume (V) of a Prism

---

Try this one...



# Volume (V) of a Prism

---

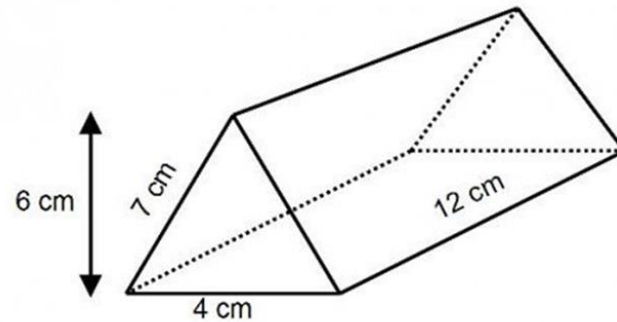
## Volume Formula

$$V = Bh$$

$$V = 12(12)$$

$$V = 144 \text{ cm}^3$$

Substitute!!



$$B = \frac{1}{2}bh$$

$$B = \frac{1}{2}(4)(6)$$

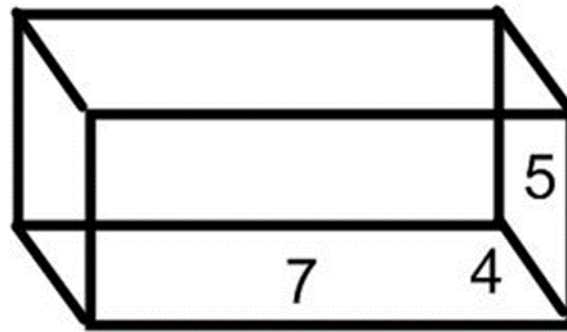
$$B = 12 \text{ cm}^2$$

$$h = 12 \text{ cm}$$

# Volume (V) of a Prism

---

Try this one...



# Volume (V) of a Prism

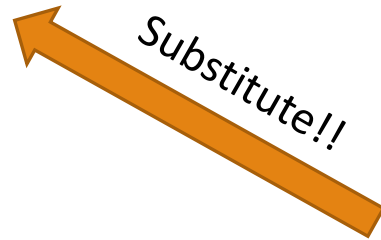
---

## Volume Formula

$$V = Bh$$

$$V = 20(7)$$

$$V = 140 \text{ cm}^3$$



$$B = bh$$

$$B = 4(5)$$

$$B = 20 \text{ cm}^2$$

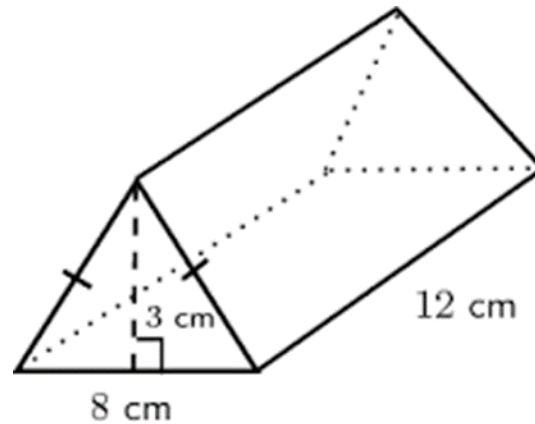
$$h = 7 \text{ cm}$$



# Volume (V) of a Prism

---

Try this one...



# Volume (V) of a Prism

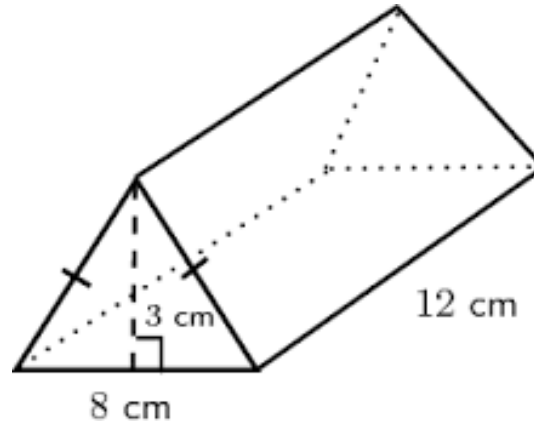
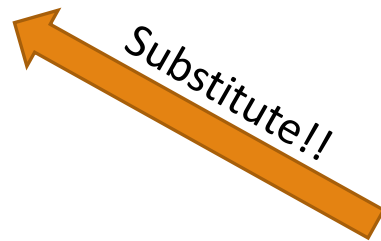
---

## Volume Formula

$$V = Bh$$

$$V = 12(12)$$

$$V = 144 \text{ cm}^3$$



$$B = \frac{1}{2}bh$$

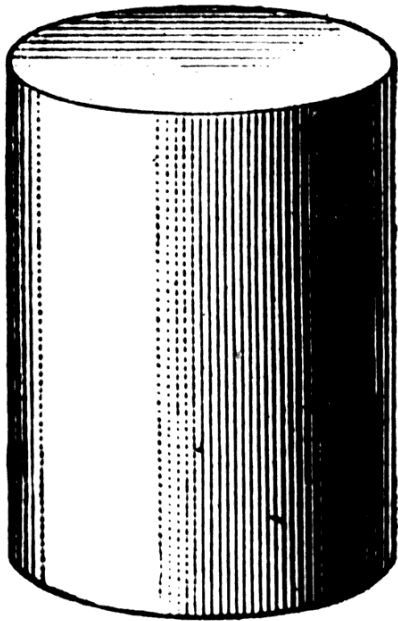
$$B = \frac{1}{2}(8)(3)$$

$$B = 12 \text{ cm}^2$$

$$h = 12 \text{ cm}$$

# Volume (V) of a Cylinder

---



# Volume (V) of a Cylinder

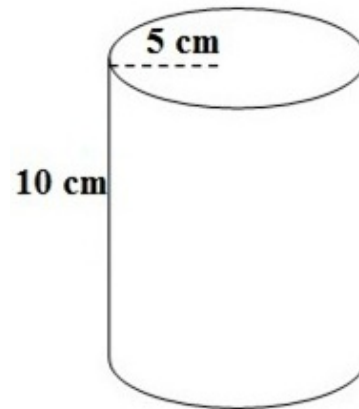
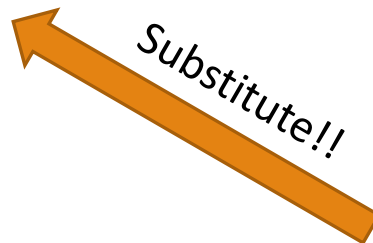
---

## Volume Formula

$$V = Bh$$

$$V = 78.5(10)$$

$$V = 785 \text{ cm}^3$$



$$B = \pi r^2$$

$$B = 3.14(5)^2$$

$$B = 3.14(25)$$

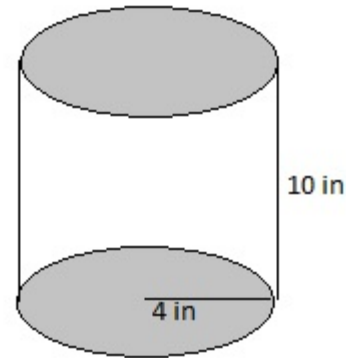
$$B = 78.5 \text{ cm}^2$$

$$h = 10 \text{ cm}$$

# Volume (V) of a Cylinder

---

Try this one...



# Volume (V) of a Cylinder

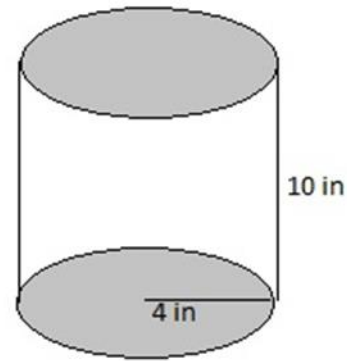
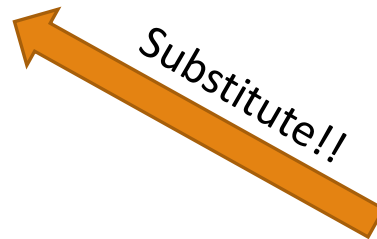
---

## Volume Formula

$$V = Bh$$

$$V = 50.24(10)$$

$$V = 502.4 \text{ in}^3$$



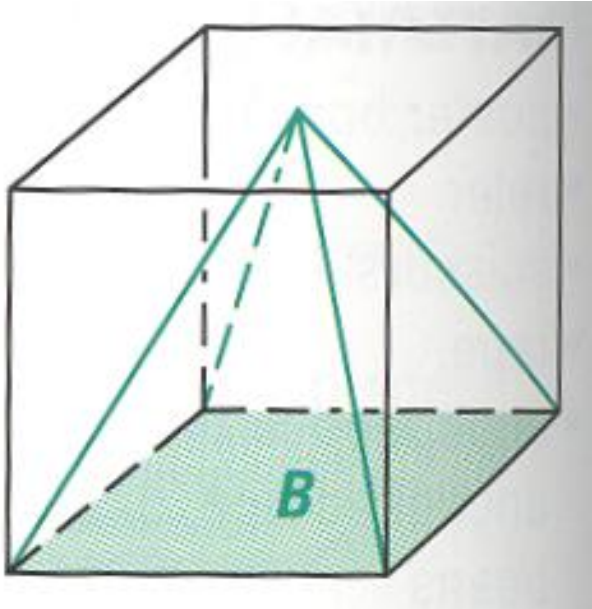
$$B = \pi r^2$$

$$B = 3.14(4)^2$$

$$B = 3.14(16)$$

$$B = 50.24 \text{ in}^2$$

$$h = 10 \text{ in}$$



---

Remember, Volume of a Prism is  $V = Bh$  where  $B$  is the area of the base.

You can see that the Volume of a Pyramid will be less than that of a Prism.

How much less? Any guesses?

# Volume (V) of a Pyramid

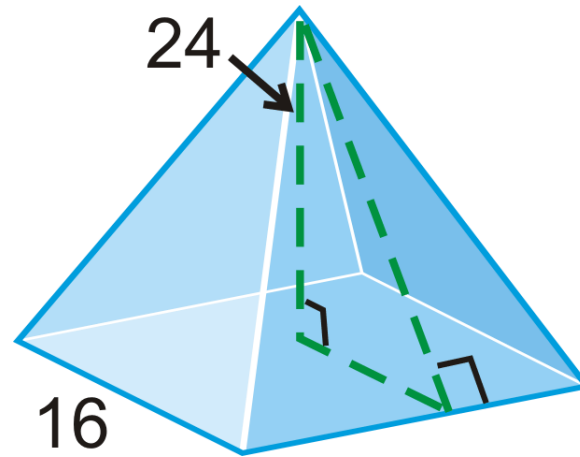
---

## Volume Formula

$$V = \frac{1}{3} Bh$$

$$V = \frac{1}{3} (256)(24)$$

$$V = 2048 \text{ cm}^3$$

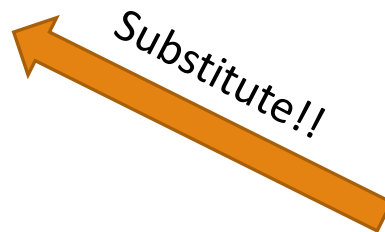


$$B = bh$$

$$B = 16(16)$$

$$B = 256 \text{ units}^2$$

$$h = 24 \text{ units}$$

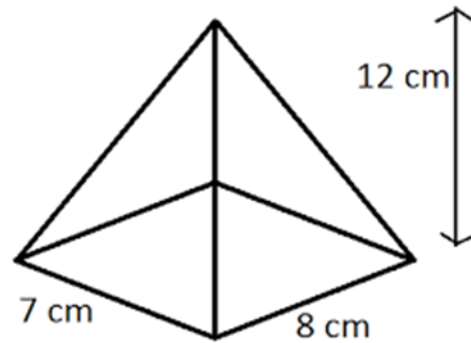




# Volume (V) of a Pyramid

---

Try this one...



# Volume (V) of a Pyramid

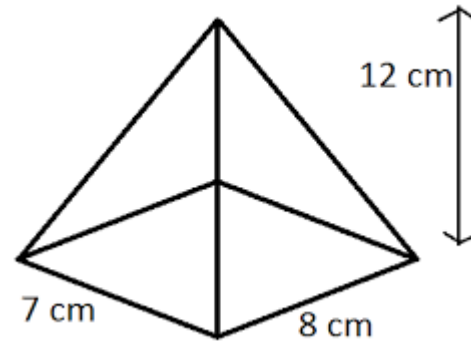
---

## Volume Formula

$$V = \frac{1}{3} Bh$$

$$V = \frac{1}{3} (56)(12)$$

$$V = 224 \text{ cm}^3$$



$$B = bh$$

$$B = 7(8)$$

$$B = 56 \text{ cm}^2$$

$$h = 12 \text{ cm}$$

Substitute!!

# Volume (V) of a Cone

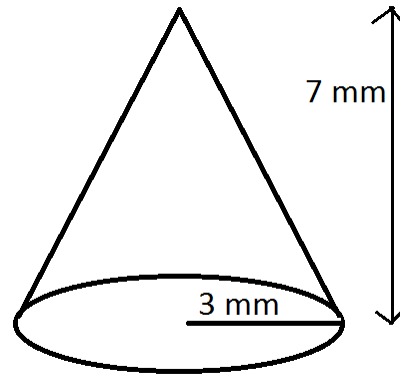
---

## Volume Formula

$$V = \frac{1}{3} Bh$$

$$V = \frac{1}{3} (28.26)(7)$$

$$V = 65.94 \text{ mm}^3$$



$$B = \pi r^2$$

$$B = 3.14(3)^2$$

$$B = 3.14(9)$$

$$B = 28.26 \text{ mm}^2$$

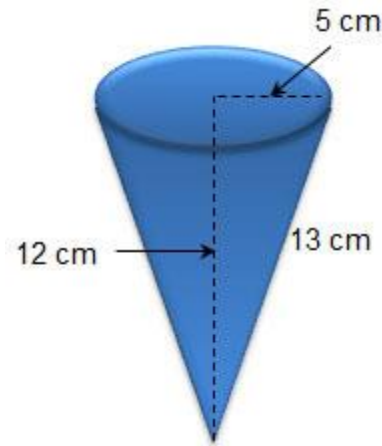
$$h = 7 \text{ mm}$$

Substitute!!

# Volume (V) of a Cone

---

Try this one...



# Volume (V) of a Cone

---

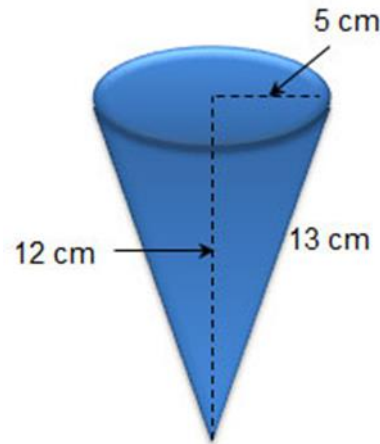
## Volume Formula

$$V = \frac{1}{3} Bh$$

$$V = \frac{1}{3} (78.5)(12)$$

$$V = 314 \text{ cm}^3$$

Substitute!!



$$B = \pi r^2$$

$$B = 3.14(5)^2$$

$$B = 3.14(25)$$

$$B = 78.5 \text{ cm}$$

$$h = 12 \text{ cm}$$

# Volume (V) of a Sphere

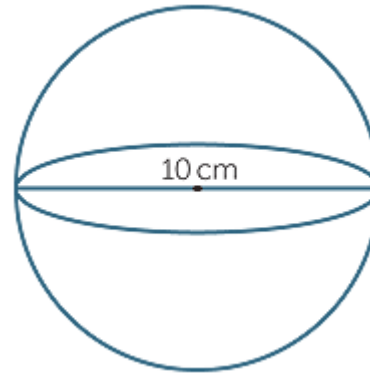
---

## Volume Formula

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

$$V = \frac{4}{3} (3.14)(5)^3$$

$$V = 523.33 \text{ cm}^3$$



Substitute!!

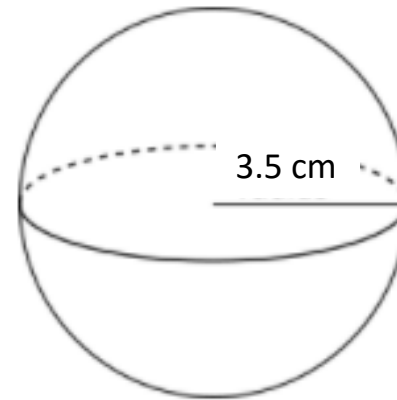
$$d = 10 \text{ cm}$$

$$r = 5 \text{ cm}$$

# Volume (V) of a Sphere

---

Try this one...



# Volume (V) of a Sphere

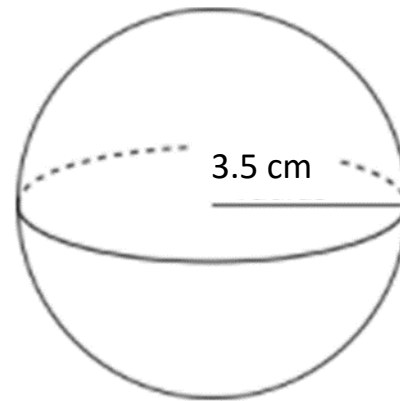
---

## Volume Formula

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

$$V = \frac{4}{3}(3.14)(3.5)^3$$

$$V = 179.503 \text{ cm}^3$$



Substitute!!

$$d = 7 \text{ cm}$$

$$r = 3.5 \text{ cm}$$