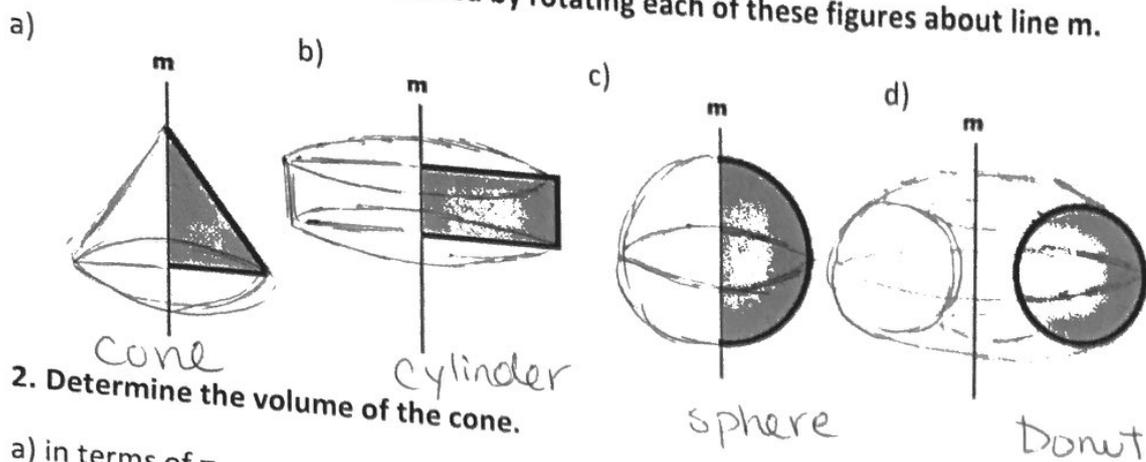
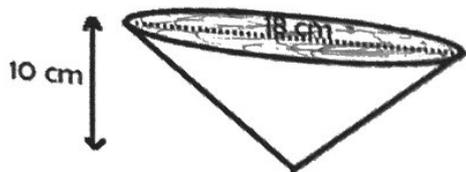


1. Describe the solid that is formed by rotating each of these figures about line m.



2. Determine the volume of the cone.

a) in terms of π

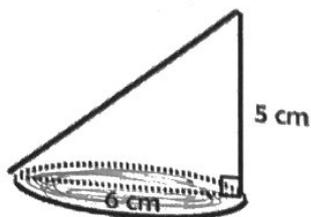


$$V = \frac{1}{3} Bh$$

$$V = \frac{1}{3} (\pi(9)^2) (10)$$

$$V = 270\pi \text{ cm}^3$$

b) in terms of π

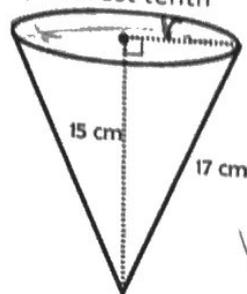


$$V = \frac{1}{3} Bh$$

$$V = \frac{1}{3} (\pi(3)^2) (5)$$

$$V = 15\pi \text{ cm}^3$$

c) nearest tenth



$$r^2 + 15^2 = 17^2$$

$$r^2 + 225 = 289$$

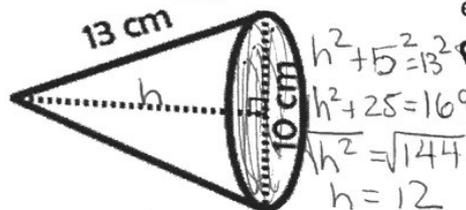
$$\sqrt{r^2} = \sqrt{64}$$

$$r = 8$$

$$V = \frac{1}{3} (\pi(8)^2) (15)$$

$$V = 320\pi \approx 1005.3$$

d) in terms of π



$$h^2 + 5^2 = 13^2$$

$$h^2 + 25 = 169$$

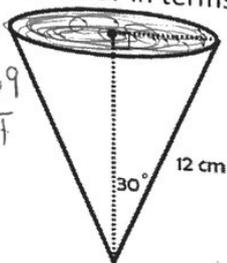
$$h^2 = \sqrt{144}$$

$$h = 12$$

$$V = \frac{1}{3} (\pi(5)^2) (12)$$

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

e) EXACT in terms of π



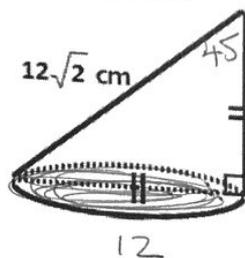
$$r = 6$$

$$h = 6\sqrt{3}$$

$$V = \frac{1}{3} (\pi(6)^2) (6\sqrt{3})$$

$$V = 72\sqrt{3}\pi \text{ cm}^3$$

f) nearest tenth

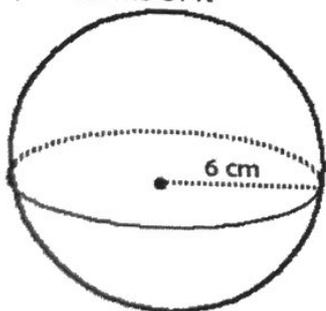


$$V = \frac{1}{3} (\pi(6)^2) (12)$$

$$V = 144\pi \approx 452.4$$

3. Determine the volume of the solid.

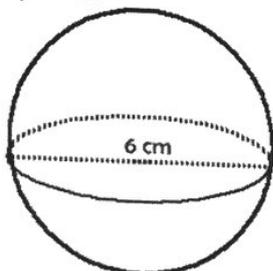
a) in terms of π



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

$$= 288\pi \text{ cm}^3$$

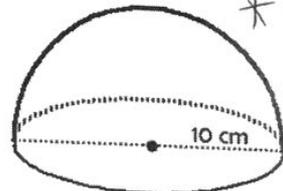
b) tenth



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

$$= 36\pi \approx 113.1$$

c) hundredth



* half of sphere (hemisphere)

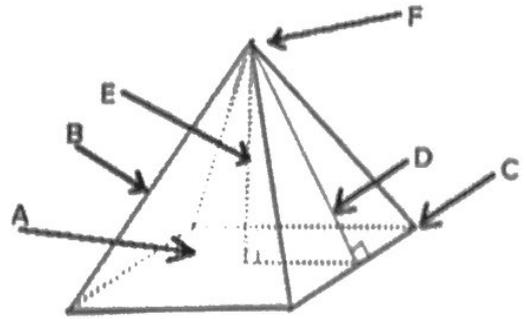
$$V = \frac{2}{3} \pi (10)^3$$

$$V = 2094.40 \text{ cm}^3$$

Match the following terms to the diagram.

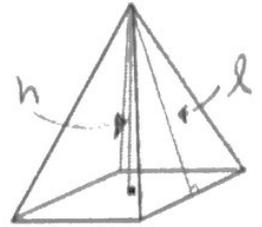
Given the square pyramid.

- D 1. Slant Height
- F 2. Apex
- E 3. Height
- B 4. Lateral Edge
- A 5. Face
- C 6. Vertex

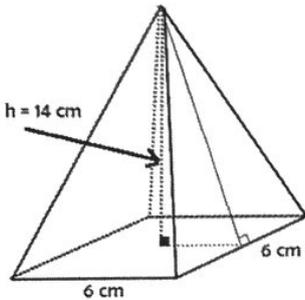


5. Jeff missed class and Dillon is explaining the notes. "The slant height and the height of the pyramid basically mean the same thing." Is this summary of height correct?

Explain. NO, they are different. Slant height (l) is the height of Δ face. Height (h) is \perp distance from apex to base face.



a) Square Pyramid

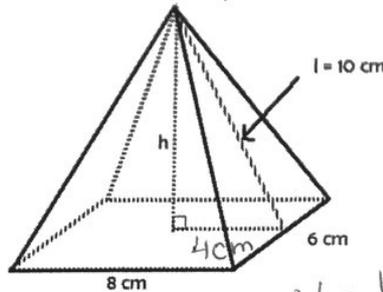


$$V = \frac{1}{3} B h$$

$$V = \frac{1}{3} (6)(6)(14)$$

$$V = 168 \text{ cm}^3$$

b) Rectangular Pyramid (nearest hundredth)



$$h^2 + 4^2 = 10^2$$

$$h^2 + 16 = 100$$

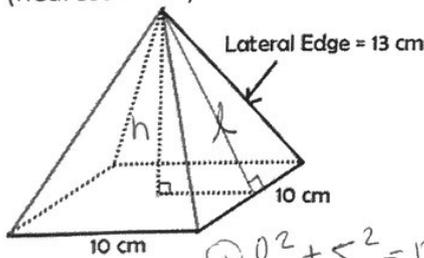
$$\sqrt{h^2} = \sqrt{84}$$

$$h \approx 9.16515$$

$$V = \frac{1}{3} (8)(6)(9.16515)$$

$$V = 146.64 \text{ cm}^3$$

c) Square Pyramid (nearest tenth)



$$\text{Lateral Edge} = 13 \text{ cm}$$

$$\text{Base side} = 10 \text{ cm}$$

$$\textcircled{1} l^2 + 5^2 = 13^2$$

$$l^2 + 25 = 169$$

$$l = 12$$

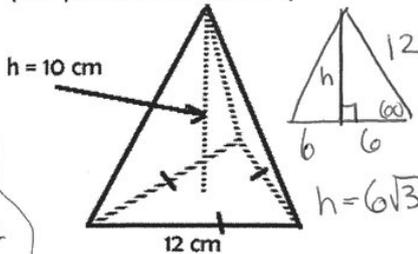
$$\textcircled{2} h^2 + 5^2 = 12^2$$

$$h^2 + 25 = 144$$

$$\sqrt{h^2} = \sqrt{119}$$

$$h = 10.90871$$

d) Equilateral Triangular Pyramid (Simplest Radical Form)

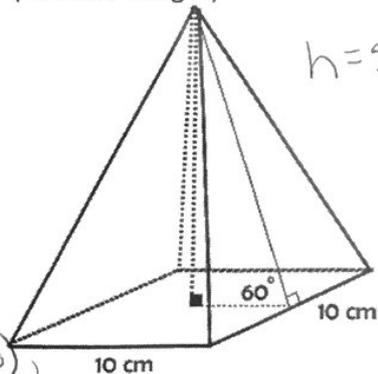


$$V = \frac{1}{3} B h$$

$$V = \frac{1}{3} \left(\frac{1}{2} (12)(6\sqrt{3}) \right) (10)$$

$$V = 120\sqrt{3} \text{ cm}^3$$

e) Square Pyramid (nearest integer)



$$h = 5\sqrt{3}$$

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

$$V = \frac{1}{3} (10)(10)(5\sqrt{3})$$

$$V = 289 \text{ cm}^3$$