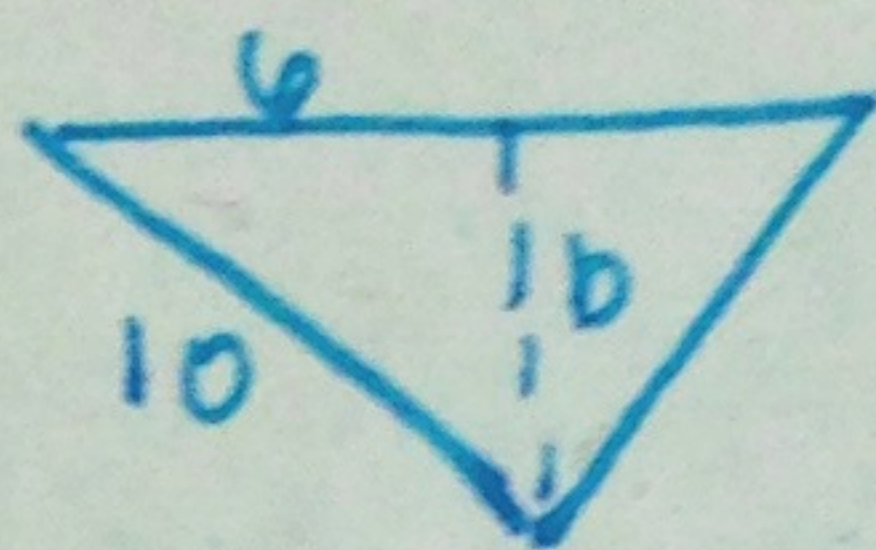
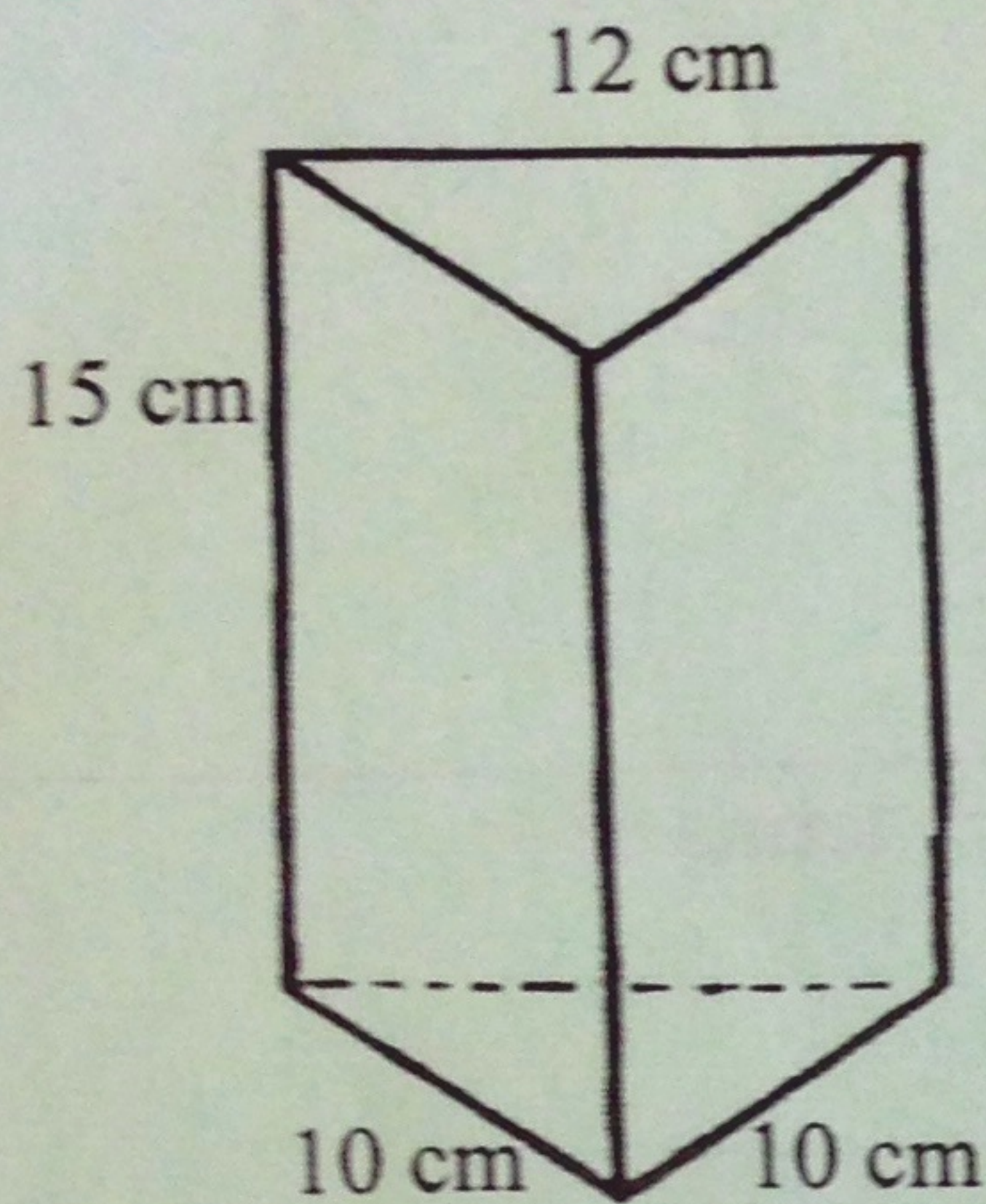


Chapter 11

#1-5: Give answers in simplest form. No decimals!

1. Find the volume of the triangular prism.



$$10^2 = 6^2 + b^2$$

$$100 = 36 + b^2$$

$$64 = b^2$$

$$b = 8$$

$$V = Bh$$

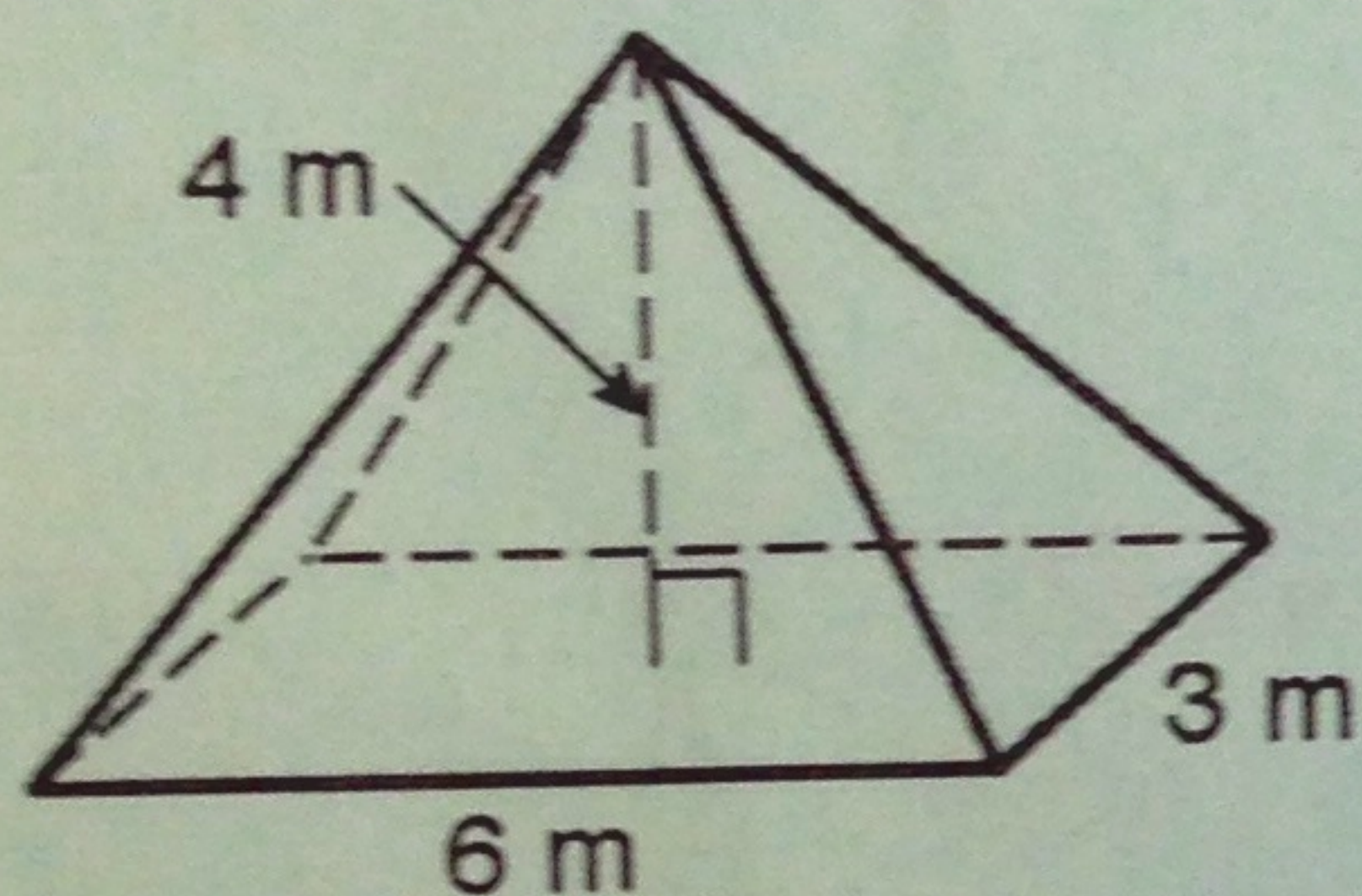
$$B = \frac{1}{2}(12)(8)$$

$$= 6(8) = 48$$

$$V = 48(15)$$

$$= 720 \text{ cm}^3$$

2. Find the volume of the rectangular pyramid.



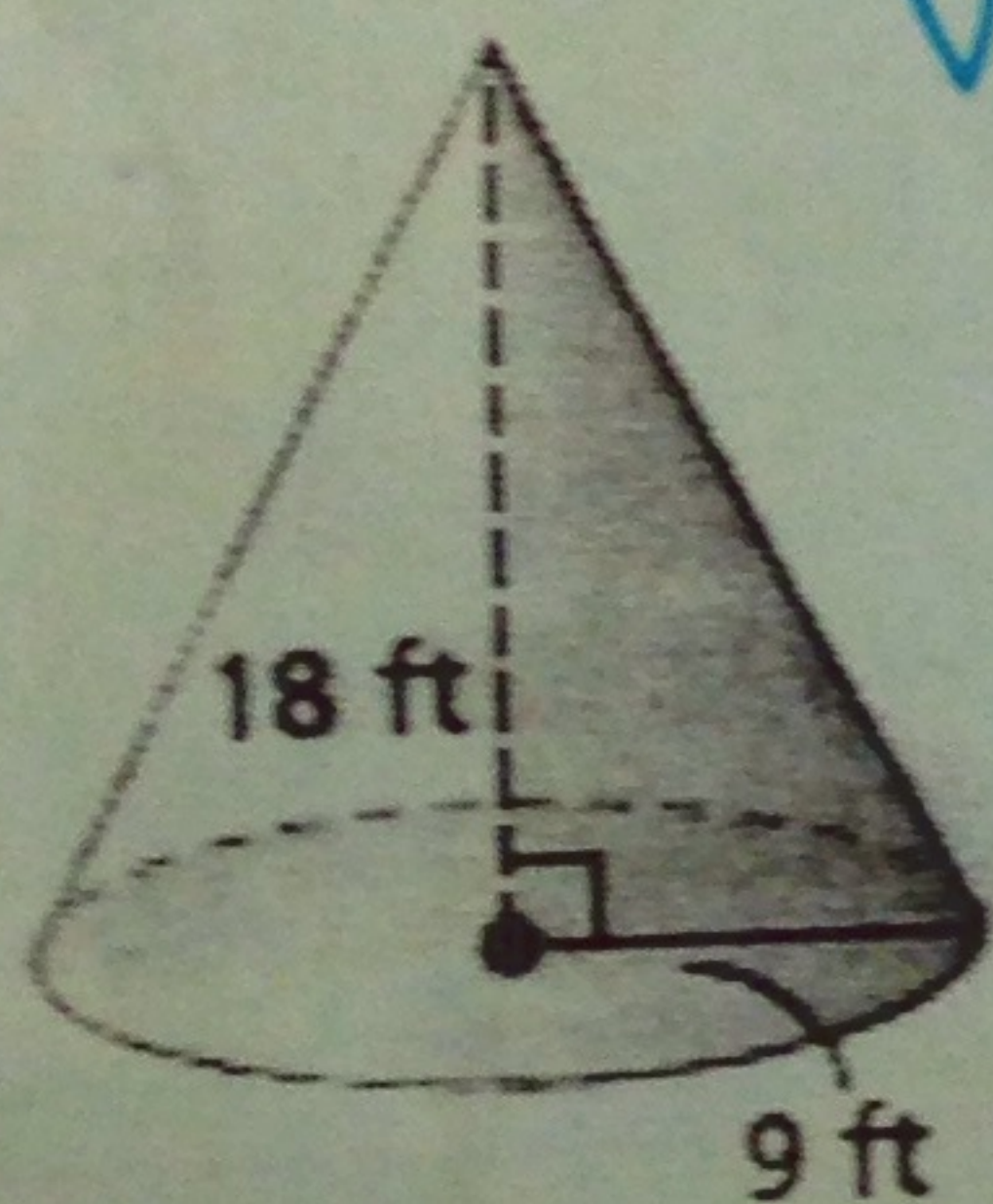
$$V = \frac{1}{3}Bh$$

$$B = 6(3) = 18$$

$$V = \frac{1}{3}(18)(4)$$

$$= 24 \text{ m}^3$$

3. Find the volume of the cone.



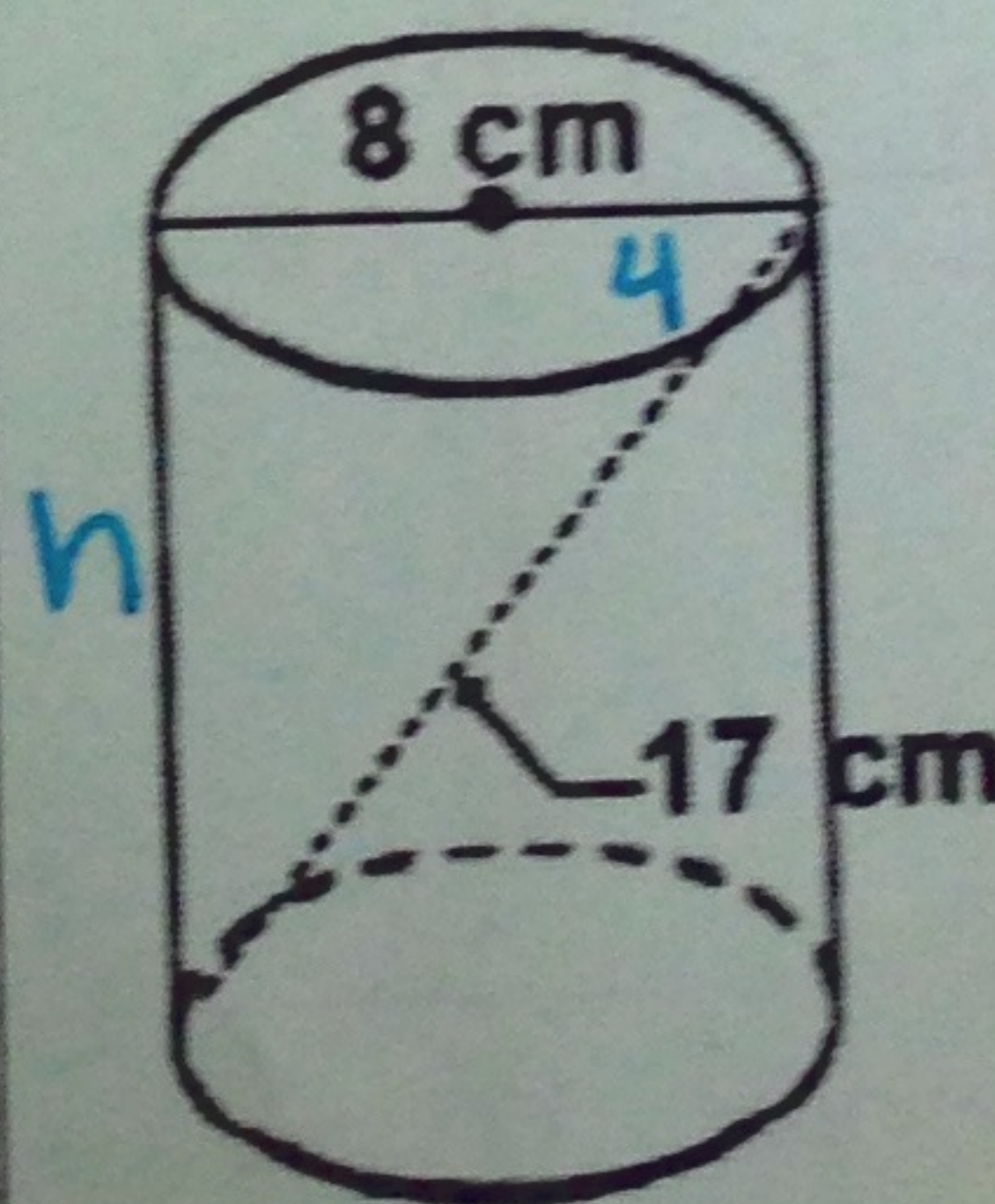
$$V = \frac{1}{3}\pi r^2 \cdot h$$

$$= \frac{1}{3}\pi(9)^2 \cdot 18$$

$$= \pi 81 \cdot 6$$

$$= 486\pi \text{ ft}^3$$

4. Find the volume of the cylinder.



$$8^2 + h^2 = 17^2$$

$$64 + h^2 = 289$$

$$h^2 = 225$$

$$h = 15$$

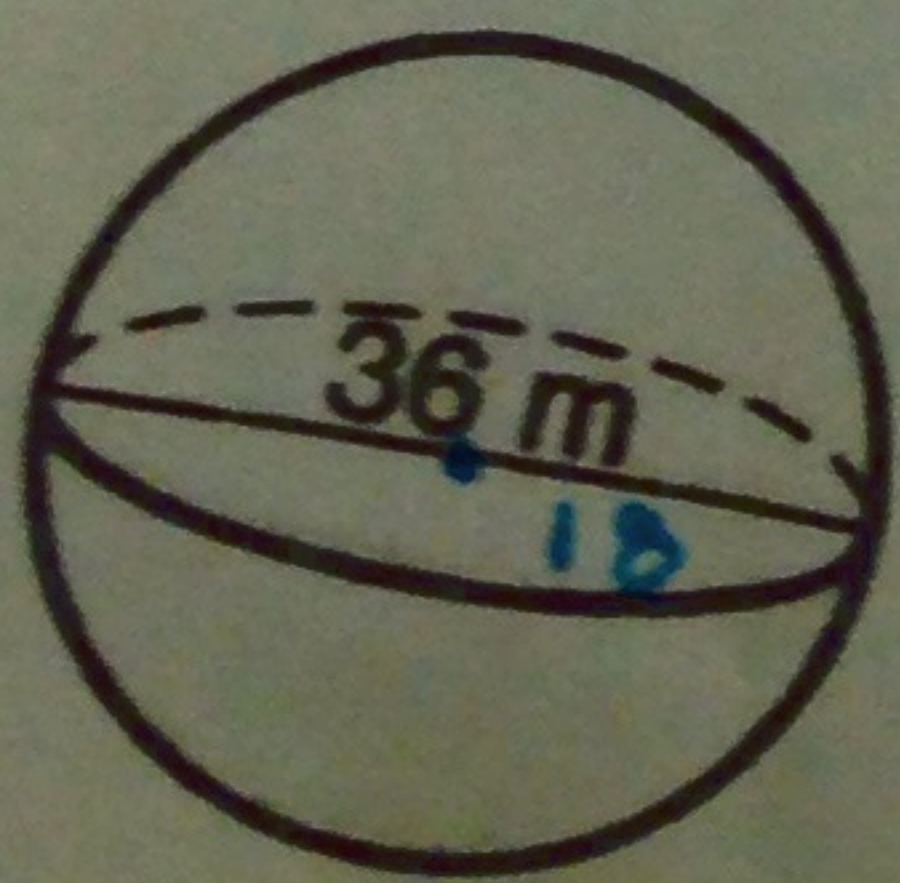
$$V = \pi r^2 \cdot h$$

$$= \pi 4^2 \cdot 15$$

$$= \pi 16 \cdot 15$$

$$= 240\pi \text{ cm}^3$$

5. Find the volume and surface area of the sphere.



$$r = 18$$

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

$$= \frac{4}{3}\pi 18^3$$

$$= \frac{4}{3}\pi 5832$$

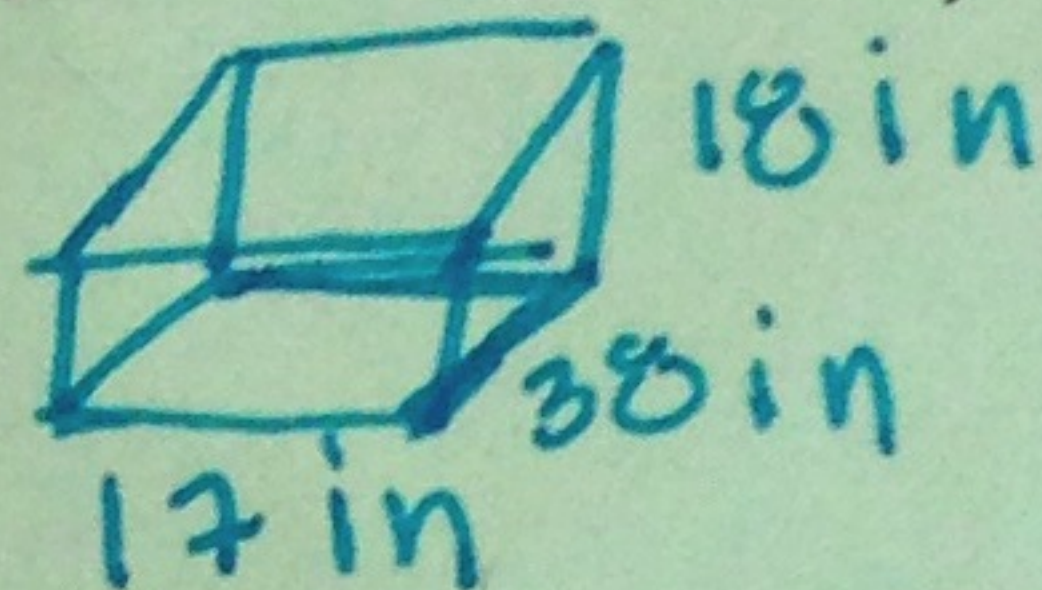
$$= 7776\pi \text{ m}^3$$

$$SA = 4\pi r^2$$

$$= 4\pi 18^2$$

$$= 1296\pi \text{ m}^2$$

6. A fish tank is in the shape of a rectangular prism. The dimensions of the tank are length 38 in., width 17 in., and height 18 in. To the nearest gallon, how many gallons of water can the fish tank hold? (1 gallon \approx 0.134 ft^3)



$$V = (17)(38)(18)$$

$$= 11628 \text{ in}^3$$

$$6.73 \text{ ft}^3 \left(\frac{1 \text{ gal}}{0.134 \text{ ft}^3} \right)$$

$$\approx 6.73 \text{ ft}^3$$

$$\approx 50.2 \text{ gals}$$

7. The surface area of a sphere is $64\pi \text{ cm}^2$. Find the volume of the sphere in terms of π .

$$SA = 4\pi r^2$$

$$64\pi = 4\pi r^2$$

$$\frac{64}{4} = \frac{4r^2}{4}$$

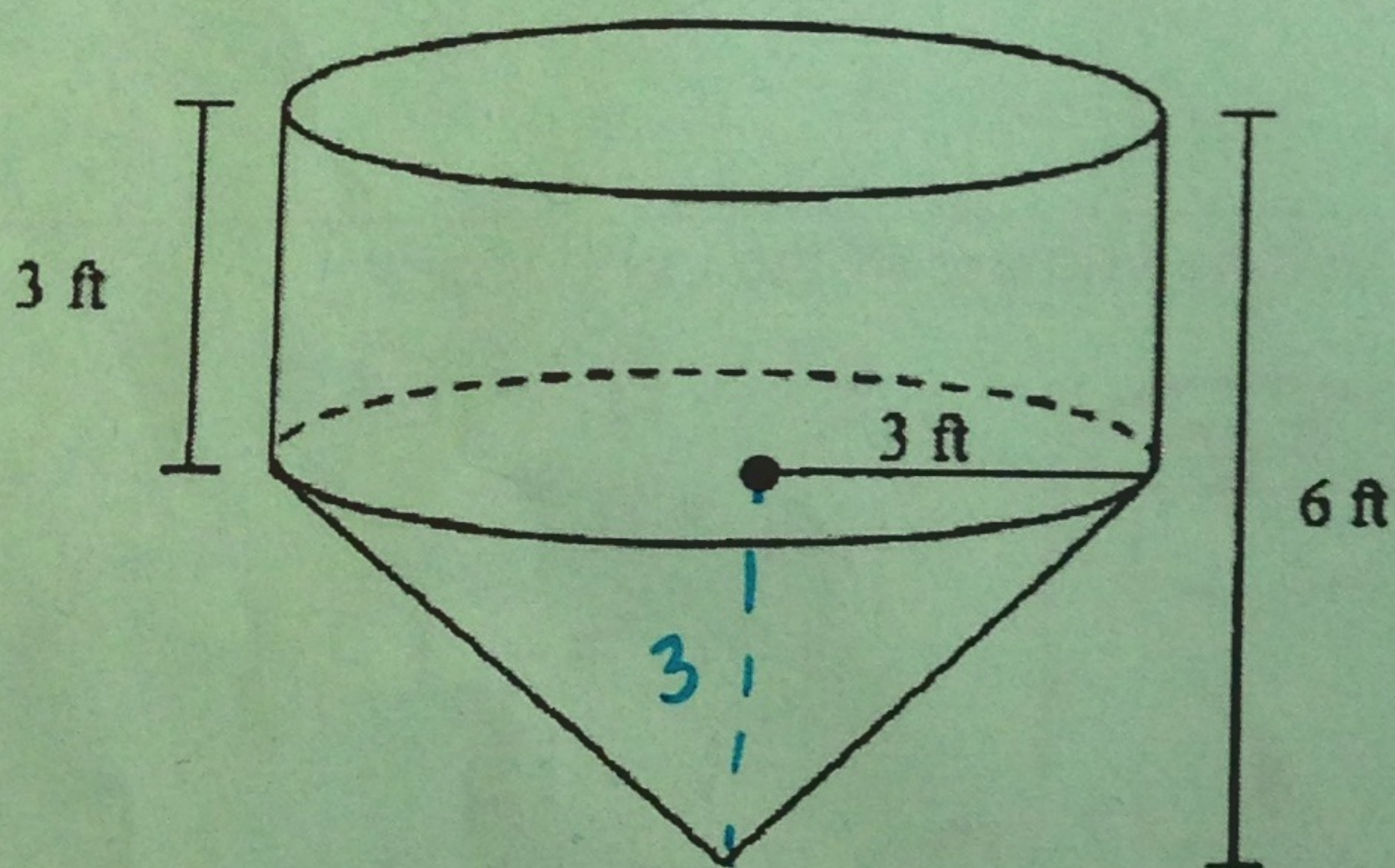
$$16 = r^2$$

$$r = 4$$

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

$$= \frac{256}{3}\pi \text{ or } 85.3\pi$$

8. Find the volume of the composite figure. Round to the nearest tenth of a ft^3 .



$$V_{\text{cylinder}} + V_{\text{cone}}$$

$$\pi r^2 \cdot h + \frac{1}{3}\pi r^2 \cdot h$$

$$\pi 3^2 \cdot 3 + \frac{1}{3}\pi 3^2 \cdot 3$$

$$27\pi + 9\pi = 36\pi \approx 113.0 \text{ ft}^3$$

Prism Volume = Bh

Cylinder Volume = $\pi r^2 h$

Sphere Surface Area = $4\pi r^2$

Pyramid Volume = $\frac{1}{3}Bh$

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

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