

## 1.5 Volume: Right Pyramids, Right Cylinders, Rectangular Prism & Right Cones

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11:20 AM

Area is measured in square units ex.  $\text{cm}^2$ ,  $\text{m}^2$ ....

Volume is measured in cubic units ex.  $\text{cm}^3$ ,  $\text{m}^3$ ....

### Square-based Pyramid

$$V = \frac{1}{3} (\text{area of base}) \times h$$

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

### Rectangular Prism

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

$$V = lwh$$

### Right Cylinder

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

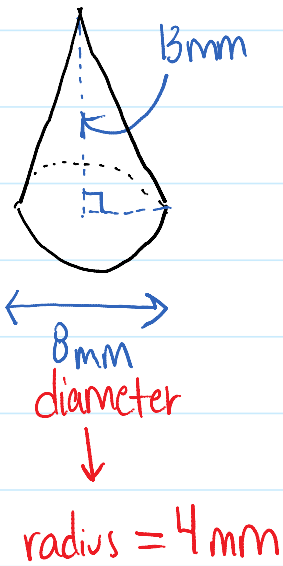
### Right Cone

$$V = \frac{1}{2} (\text{area of base}) \times h$$

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

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

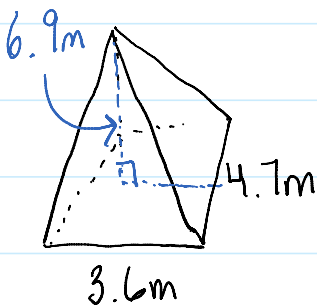
Ex #1



$$\begin{aligned} V &= \frac{1}{3} \pi r^2 h \\ &= \frac{1}{3} \pi (4)^2 h \\ &= \frac{1}{3} \pi 16 \cdot 13 = \boxed{217.8 \text{ mm}^2} \end{aligned}$$

Ex #2

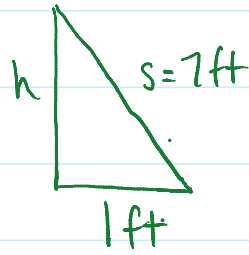
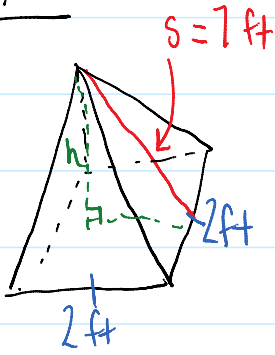
Volume of a right rectangular pyramid with base dimensions  $3.6\text{m} \times 4.7\text{m}$  and a height  $6.9\text{m}$ .



$$\begin{aligned} V &= \frac{1}{3} (\text{area of base}) \times h \\ &= \frac{1}{3} lwh \\ &= \frac{1}{3} (3.6)(4.7)(6.9) = \boxed{38.9 \text{ m}^3} \end{aligned}$$

Ex #2

Ex, #3



\*Use pythagorean theorem\*

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

$$a^2 + 1^2 = 7^2$$

$$-1^2 \quad -1^2$$

$$\sqrt{a^2} = \sqrt{48}$$

$$a = 6.9 \text{ ft}$$

$$V = \frac{1}{3} b^2 h = \frac{1}{3} (2^2)(6.9) = \boxed{9.2 \text{ ft}^3}$$