

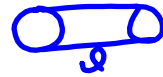
Given Perimeter, Area, or Volume Find other Dimension

- (1) The area of a square is  $200 \text{ cm}^2$ . What is the *length* of each side?

$$\begin{aligned} A &= s^2 \\ \sqrt{200} &= \sqrt{s^2} \\ 14.14 &= s \\ \text{cm} \end{aligned}$$

- (2) The volume of a cylinder is  $550 \text{ m}^3$ . If its diameter is 10 m, find its *length*.

$$r = 5$$



$$\begin{aligned} V &= \pi r^2 h \\ 550 &= \pi (5)^2 h \\ \frac{550}{(\pi (5)^2)} &= \frac{\pi (5)^2 h}{\pi (5)^2} \\ h &= 7 \text{ m} \end{aligned}$$

- (3) A rectangular prism has a volume of  $300 \text{ cm}^3$  and has a height of 8 cm. Find the *area* of its base.

$$\begin{aligned} V &= LWH \\ 300 &= \underline{LW} 8 \\ \frac{300}{8} &= \frac{A 8}{8} \\ 37.5 &= A \\ \text{cm}^2 \end{aligned}$$

- (4) A right square pyramid has a lateral surface area of  $75 \text{ cm}^2$  and a base side length of 4 cm. Find the slant height.

$$SA_{\text{lateral}} = \cancel{A_{\text{base}}} + 4A_{\text{sides}} \quad \triangle$$

$$75 = 4 \left( \frac{bh}{2} \right)$$

$$\frac{75}{(2)(4)} = \frac{2(4)h}{(2)(4)}$$

$$h = 9.38 \text{ cm}$$

- (5) A right cone has a surface area of  $6500 \text{ ft}^2$  and a base diameter of 45 ft. Find the slant height.  $r = 22.5$

$$SA = \pi r^2 + \pi r s$$

$$6500 = \pi (22.5)^2 + \pi (22.5)s$$

$$-\pi (22.5)^2 \quad -\pi (22.5)^2$$

Use all decimals  $\rightarrow$   $\frac{4909.57}{\pi(22.5)} = \frac{\pi(22.5)s}{\pi(22.5)}$

$$69.46 = s$$

ft

- (6) A right cone has a volume of  $345 \text{ m}^3$  and a height of 13 m. Find the diameter of the base.

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

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

$$(3) 345 = \frac{\pi r^2 (13)}{3} \quad (3)$$

$$\frac{1035}{\pi(13)} = \frac{\pi r^2 (13)}{\pi(13)}$$

$$\sqrt{25.34} = \sqrt{r^2}$$

$$5.03 = r$$

$$d = 10.07 \text{ m}$$

WS #1-8