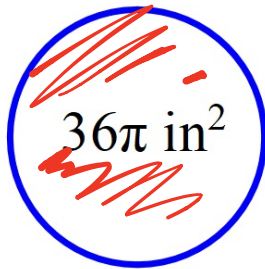


Good afternoon: warm up in notebooks

Find the circumference of a circle with area $36\pi \text{ in}^2$.



$$\begin{aligned} A &= \pi r^2 = 36\pi \\ \cancel{\pi} r^2 &= \cancel{\pi} 36 \\ r^2 &= 36 \\ r &= \sqrt{36} = \underline{6} \end{aligned}$$

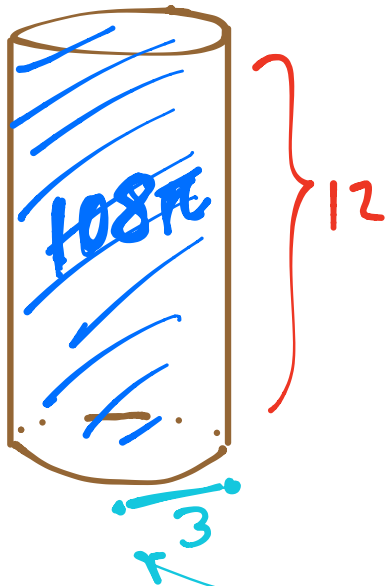
$$\begin{aligned} C &= 2\pi r \\ C &= 2\pi \cdot 6 \\ C &= 12\pi \text{ in} \\ &\approx 37.7 \text{ in} \end{aligned}$$

Reminders:

tutoring tomorrow 4-5p

tornado? go *right* out door, around to auditorium via right door

Find the surface area of a cylinder with height 12 and volume 108π .



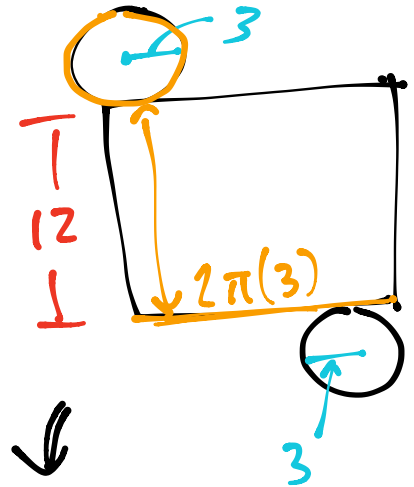
$$V = \pi r^2 \cdot h = 108\pi$$

$$\frac{\pi \cdot r^2 \cdot 12}{\pi} = \frac{108\pi}{\pi}$$

$$\frac{r^2 \cdot 12}{12} = \frac{108}{12}$$

$$r^2 = 9$$

$$r = \sqrt{9} = 3$$



$$\begin{aligned} SA &= \pi \cdot 3^2 + \pi \cdot 3^2 + 2\pi \cdot 3 \cdot 12 \\ &= 9\pi + 9\pi + 72\pi \\ &= 90\pi \text{ units}^2 \end{aligned}$$

Circle circumference ✓

Circle area ✓

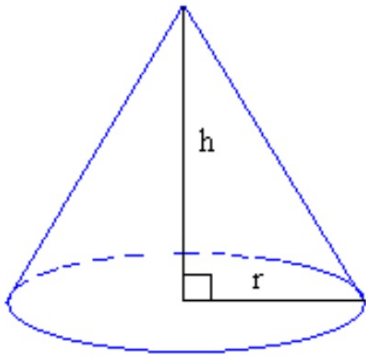
Cylinder volume ✓

Cylinder surface area ✓

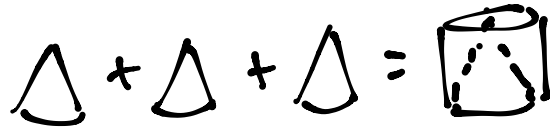
Cone volume

Cone surface area

What is the formula for cone volume?

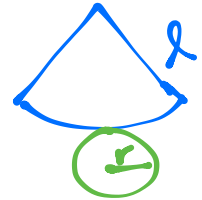
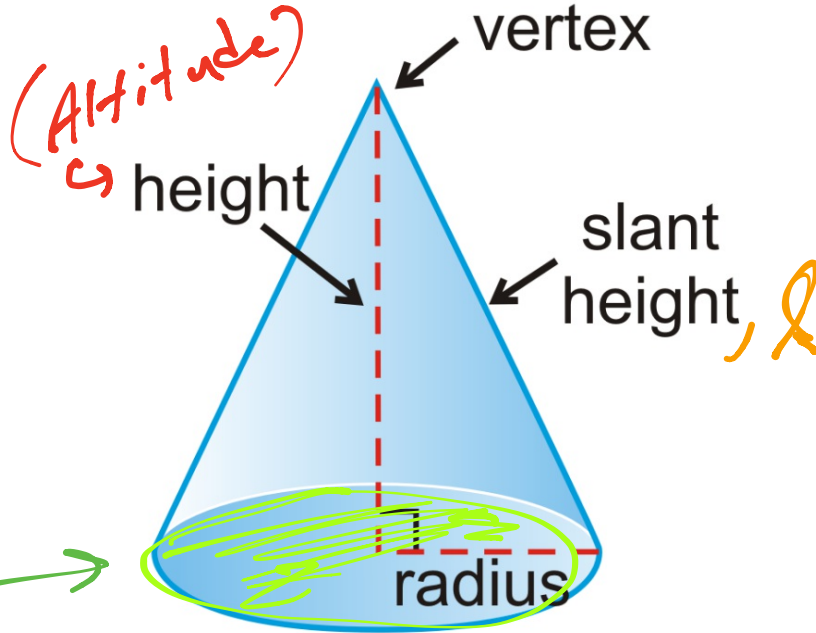


$$V = \frac{1}{3} \pi r^2 h$$



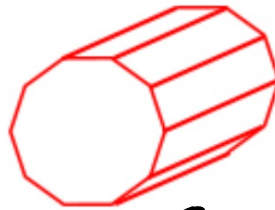
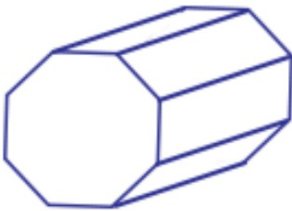
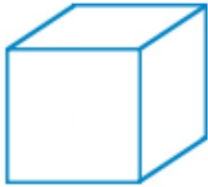
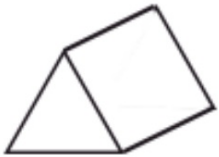
Parts of the cone

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



Base

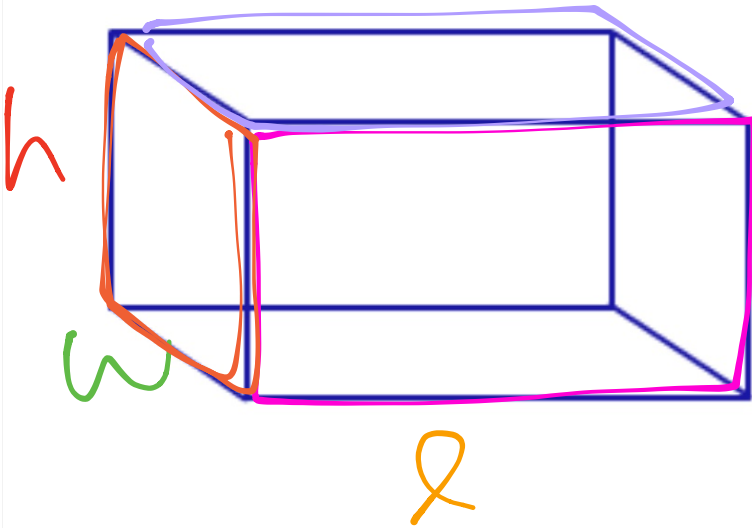
Prisms



- 3D "extrusion" (stretch) of a shape
- 2 \cong shapes whose vertices are connected by rectangles

$$SA = 2(l \cdot h) + 2(h \cdot w) + 2(l \cdot w)$$

Rectangular Prisms



$$V = l \cdot w \cdot h$$

HW

p 505-6: #3,5,6,8,11,12

continue studying formulas: bit.ly/formulas18