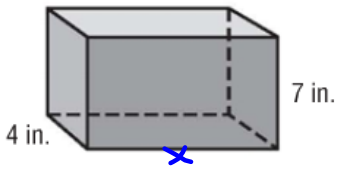
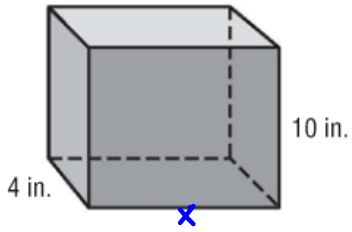
Prisms A and B have the same length and width, but different heights. If the volume of Prism B is 150 cubic inches greater than the volume of Prism A, what is the length of each prism?



Prism A



Prism B

$A = 4 \cdot 7 \cdot x$

$28x$

28×12.5

350

$A + 150 = B$

$28x + 150 = 40x$

$150 = 12x$

$12.5 = x$

$B = 4 \cdot x \cdot 10$

$40x$

$40(12.5)$

500

Volume of Pyramids and Cones

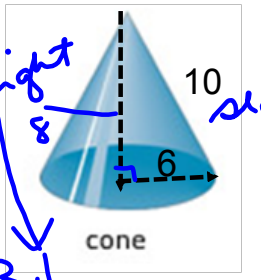
Pyramid

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

Cone

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

$x^2+6^2=10^2$



height

slant height

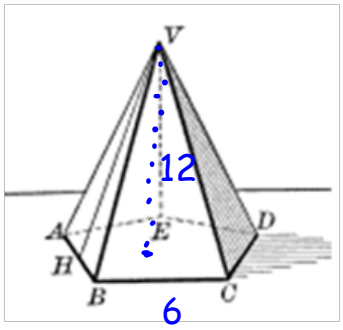
$V=\frac{1}{3}B\cdot h$

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

$V=\frac{1}{3}\pi 6^2\cdot 8$

$\frac{1}{3}\pi\cdot 36\cdot 8=96\pi \text{ cm}^3$

≈ 301.593

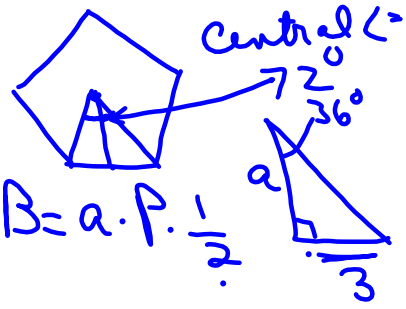


$V=\frac{1}{3}B\cdot h$

$\frac{1}{3}(61.905)12=247.62 \text{ cm}^3$

$B=\frac{1}{2}(4.127)(30)$

$=61.905$



central $\angle=\frac{360}{5}$

$\tan 36=\frac{3}{a}$

or

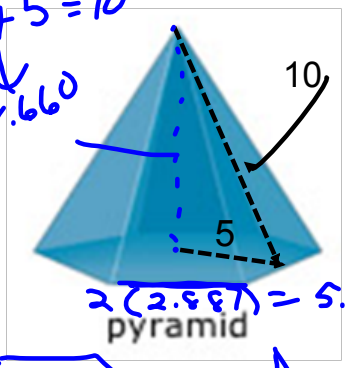
$\tan 54=\frac{a}{3}$

$a=4.127$

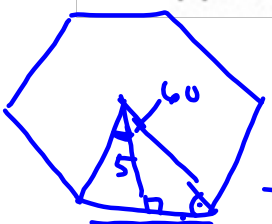
$B=a\cdot P\cdot\frac{1}{2}$

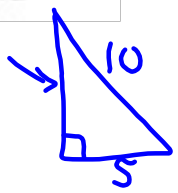
$x^2 + 5^2 = 10^2$

$x \approx 8.660$



$2(2.887) = 5.774$





$a = 5 \quad 2.887$

$\tan 30 = \frac{x}{5}$

$P = 6(5.774) = 34.644$

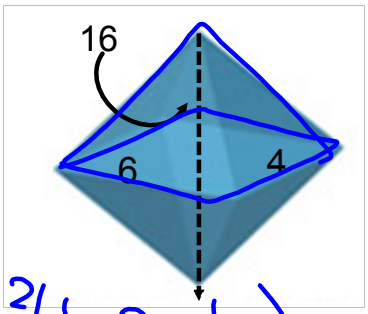
$B = \frac{1}{2}(5)(34.644)$

$B = 86.60$

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

$\frac{1}{3}(86.60)(8.660)$

$\approx 249.985 \text{ m}^3$



$B = 6 \cdot 4 \quad h = 16$

$V = \frac{1}{3}(24)(16)$

$B \cdot h_1 + B \cdot h_2$

$B(h_1 + h_2)$

$B \cdot 16$

$V = 2\left(\frac{1}{3} B \cdot h\right)$

$\frac{1}{3}(6 \cdot 4) \cdot 8$

$\frac{1}{3}(24) \cdot 8$

$2(64) = 128 \text{ cm}^3$

Assignment:

pg 860 12 - 33 by 3's

pg 856 4 - 12 evens