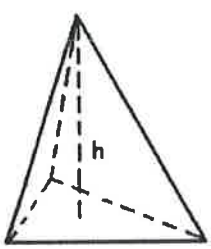
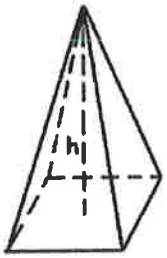
Volume of Cones and Pyramids

Volume of Cones and Pyramids $= \frac{1}{3}Bh$ **B = Area of base** **h = height**

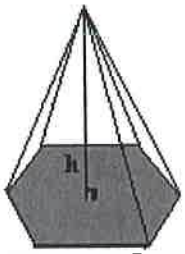


Triangular Pyramid

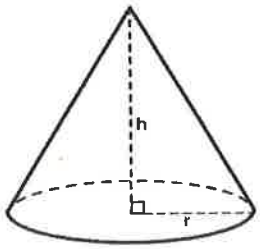


Rectangular Pyramid

Pentagonal Pyramid

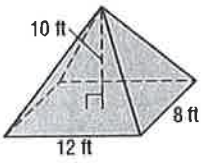


Hexagonal Pyramid



Cone

A)



$B = 12 \cdot 8 = 96\ ft^2$

$V = \frac{1}{3}(96)(10)$

$V = 320\ ft^3$

B)

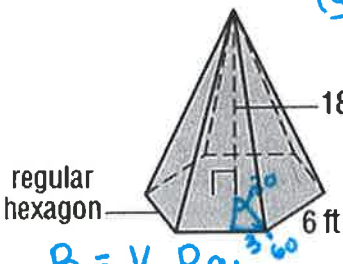
$B = \frac{1}{2}(8)(6)$

$B = 24\ ft^2$

$V = \frac{1}{3}(24)(15)$

$V = 120\ ft^3$

C)



$\frac{(6-2)180}{6} = 120$

$a = 3\sqrt{3}$

$P = 6(6) = 36$

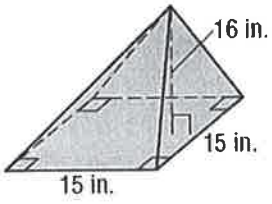
$B = \frac{1}{2}Pa$

$B = \frac{1}{2}(36)(3\sqrt{3})$

$V = \frac{1}{3}\left(\frac{1}{2}(36)(3\sqrt{3})\right) \cdot 18$

$V = 561.18\ ft^3$

D)

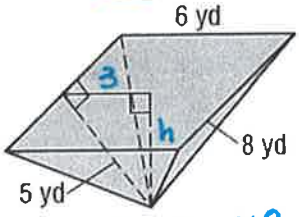


$B = 15(15) = 225\ in^2$

$V = \frac{1}{3}(225)(16)$

$V = 1200\ in^3$

E)



$B = 8(6) = 48$

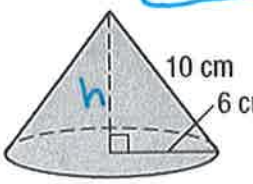
$3^2 + h^2 = 5^2$

$h = 4$

$V = \frac{1}{3}(48)(4)$

$V = 64\ yd^3$

F)

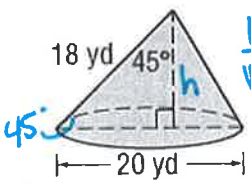


$6^2 + h^2 = 10^2$

$h = 8$

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

$V = 301.59\ cm^3$



$\frac{18}{\sqrt{2}} = \frac{16\sqrt{2}}{2} = 9\sqrt{2}$

$h = 9\sqrt{2}$

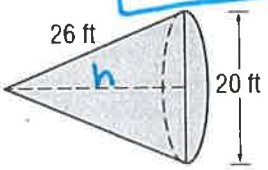
$r = 10$

$B = \pi(10)^2 = 100\pi$

$V = \frac{1}{3}(100\pi)(9\sqrt{2})$

$V = 1332.86\ yd^3$

H)



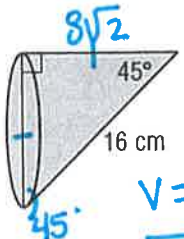
$h^2 + 10^2 = 26^2$

$h = 24$

$V = \frac{1}{3}\pi(10^2)(24)$

$V = 2513.3\ ft^3$

I)



$\frac{16}{\sqrt{2}} = \frac{16\sqrt{2}}{2} = 8\sqrt{2}$

$A = \pi(4\sqrt{2})^2 = 32\pi$

$V = \frac{1}{3}\pi(32)(8\sqrt{2})$

$V = 379.13\ cm^3$