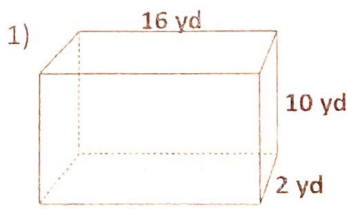
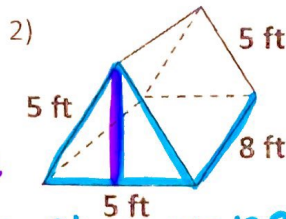
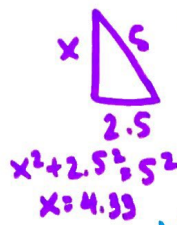


Directions: Find the volume of each shape with the given information.



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

$$V = 16 \cdot 10 \cdot 2 = 320 \text{ yd}^3$$

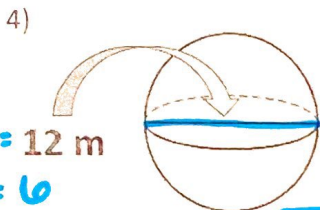
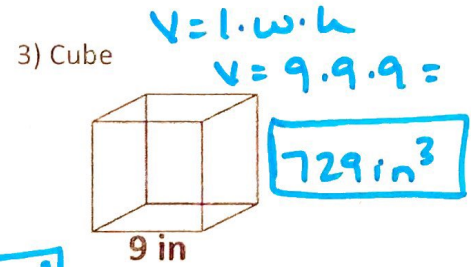


$$V = Bh$$

$$B = \text{triangle } \left(\frac{1}{2}bh\right)$$

$$B = \frac{1}{2}(5)(4.33) = 10.83$$

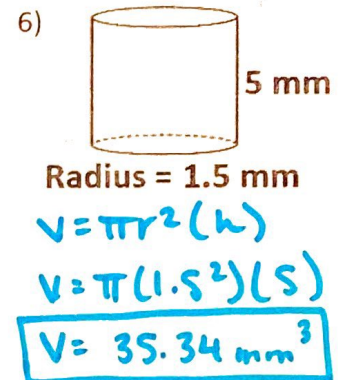
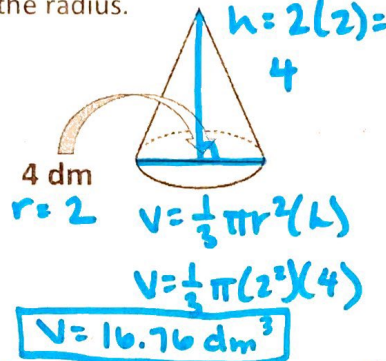
$$V = 10.83 \times 8 = 86.64 \text{ ft}^3$$



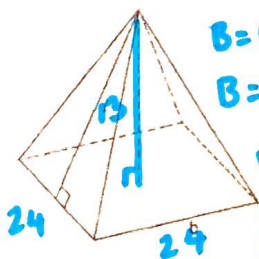
$$V = \frac{4}{3}\pi r^3$$

$$V = \frac{4}{3}\pi(6^3) = 288\pi \text{ or } 904.78 \text{ m}^3$$

5) The height is double the radius.



7) Regular (square) Pyramid with base edges of 24 ft & height of 13 ft.



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

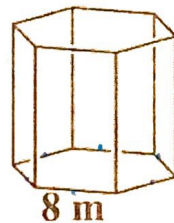
$$B = \text{square } (s^2)$$

$$B = 24(24) = 576$$

$$V = \frac{1}{3}(576)(13)$$

$$V = 2496 \text{ ft}^3$$

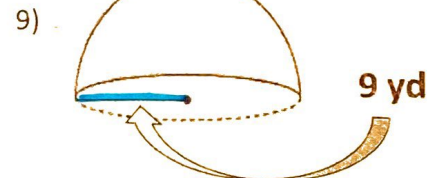
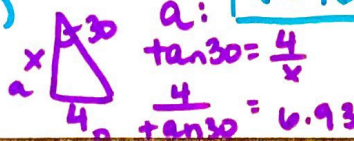
8) Regular Prism



$$V = \frac{1}{2}ap(h)$$

$$V = \frac{1}{2}(6.93)(48)(10)$$

$$V = 1663.2 \text{ m}^3$$



$$V = \frac{4}{3}\pi r^3$$

$$V = \frac{\frac{4}{3}\pi(9^3)}{2} = 486\pi \text{ or } 1526.81 \text{ yd}^3$$

10) The volume of a ball is  $972\pi \text{ cm}^3$ . What is the radius of this ball to the nearest tenth?

$$V = \frac{4}{3}\pi r^3 \rightarrow 972\pi = \frac{4}{3}\pi r^3 \left(\frac{3}{4}\right) \rightarrow 729 = r^3 \rightarrow r = 9$$

$$\frac{2290.22}{\pi} = \frac{\pi r^3}{\pi} \rightarrow \sqrt[3]{729} = 9$$

11) The circumference of the Earth is estimated to be about  $7920\pi$  miles. What is the estimated volume of the Earth?

$$C = 2\pi r \rightarrow \frac{7920\pi}{(2\pi)} = \frac{2\pi r}{(2\pi)}$$

$$3960 = r$$

$$V = \frac{4}{3}\pi r^3$$

$$V = \frac{4}{3}\pi(3960^3) = 2.6 \times 10^{11} \text{ mi}^3$$

Directions: Find the volume for each composite figure.

12)

$V = \frac{1}{3}\pi r^2(h)$   
 $V = \frac{1}{3}\pi(6^2)(12) = 144\pi$   
 $V = \frac{4}{3}\pi r^3$   
 $V = \frac{4}{3}\pi(6^3) = 144\pi$   
 $288\pi$  or  $904.78 \text{ ft}^3$

13)

$V = \frac{1}{3}Bh$   
 $B = \text{Square } (bh)$   
 $B = 4(4) = 16$   
 $V = \frac{1}{3}(16)(6) = 32 \text{ in}^3$   
 $V = l \cdot w \cdot h$   
 $V = 4 \cdot 4 \cdot 5 = 80 \text{ in}^3$   
 $112 \text{ in}^3$

13) A regular pentagonal (5 sides) prism has an apothem of 3 inches and a height of 5 inches. What is the volume of the pentagonal prism?

$V = \frac{1}{2}ap(h)$   
 $V = \frac{1}{2}(3)(21.8)(5)$   
 $P = 4.36(5) = 21.8$   
 $V = 163.5 \text{ in}^3$

14) Find the volume of each figure.

$V = \frac{1}{3}\pi r^2(h)$   
 $V = \frac{1}{3}\pi(12^2)(16) = 768\pi$  or  $2412.74 \text{ ft}^3$   
 $V = \frac{4}{3}\pi r^3$   
 $V = \frac{4}{3}\pi(7^3) = 1436.76 \text{ ft}^3$   
 $V = \frac{1}{3}Bh$   
 $B = \text{triangle } (\frac{1}{2}bh)$   
 $B = \frac{1}{2}(13)(26) = 169$   
 $V = \frac{1}{3}(169)(24) = 1352 \text{ ft}^3$   
 $V = \pi r^2(h)$   
 $V = \pi(4^2)(24) = 384\pi$  or  $1206.37$

$V = Bh$   
 $B = \text{triangle } (\frac{1}{2}bh)$   
 $B = \frac{1}{2}(12)(12) = 72$   
 $V = 72(23) = 1656 \text{ ft}^3$

15) Find the area of the vertical cross section of a cone whose radius is 8 and height is 10.

$a = \frac{1}{2}(10)(10) = 50 \text{ units}^2$   
 $r = 8$   
 $d = 16$

16) A cube has an edge length of 6.5 in. If the dimensions of the cube are multiplied by  $\frac{1}{4}$  describe the effect on the volume.

$(\frac{1}{4})^3 = \text{volume is } \frac{1}{64}$   
 $\text{the original.}$

17) The volume of a cylinder is  $490\pi \text{ cm}^3$ . The radius of the cylinder is 7. What is the height of the cylinder?

$V = \pi r^2(h)$   
 $\frac{490\pi}{49\pi} = \frac{\pi(7^2)(h)}{49\pi}$   
 $10 = h$