

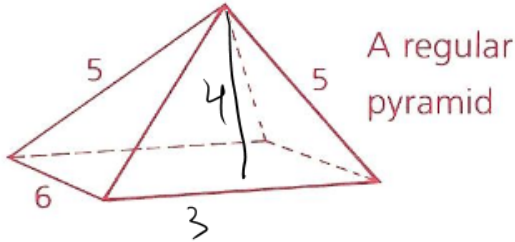
## Area &amp; Volume (ch 12) Review: 1-11, 17, 19, 21

Note Title

5/12/2016

- 1 Find the lateral area and the total area of the regular pyramid and the cylinder.

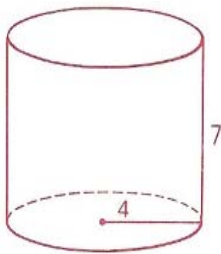
a



$$\begin{aligned}
 L.A._{pyr} &= 4(\text{faces}) \\
 &= 4\left(\frac{1}{2}bh\right) \\
 &= 4\left(\frac{1}{2}(6 \cdot 4)\right) \\
 &= 4(12) \\
 &= 48
 \end{aligned}$$

$$\begin{aligned}
 T.A. &= L.A. + \text{base} \\
 &= 48 + 36 \\
 &= 84
 \end{aligned}$$

b

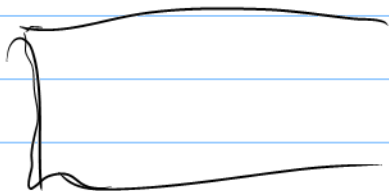


$$\begin{aligned}
 L.A._{cy} &= bh \\
 &= (7)(8\pi) \\
 &= 56\pi
 \end{aligned}$$

| 7

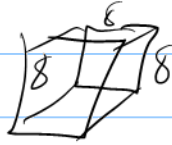
$$\begin{aligned}
 T.A. &= L.A. + 2\text{bases} \\
 &= 56\pi + 2(\pi r^2)
 \end{aligned}$$

$$\begin{aligned}
 &= 56\pi + 2(\pi)(4^2) \\
 &= 56\pi + 32\pi \\
 &= 88\pi
 \end{aligned}$$



- 2 Find the volume of  
 a A cube with a side of 8

$$V = Bd$$



$$8 \overline{) 64} \begin{array}{r} 8 \\ 64 \\ \hline 0 \end{array} \quad 8^2 = 64 \quad \begin{array}{r} 8 \\ 512 \end{array}$$

- b A rectangular box that measures 3 by  $4\frac{1}{2}$  by 8

$$\begin{aligned} V &= Bh \\ &= l \cdot w \cdot h \\ &= 3 \cdot 4\frac{1}{2} \cdot 8 \\ &= 3 \cdot 9 \cdot 4 \\ &= 108 \end{aligned}$$

- c A cylinder with a radius of 7 and a height of 2

$$\begin{aligned} V &= Bh = (\pi r^2)h \\ &= \pi (7^2)h = 49\pi \cdot 2 \\ &= 98\pi \end{aligned}$$



- d A pyramid with a height of 5 and a base area of 12

$$\begin{aligned} V &= \frac{1}{3} B h \\ &= (12)(5) \frac{1}{3} \\ &= 20 \end{aligned}$$

e A prism with a height of 5 and a base area of 12

$$V = Bh$$

$$V = 12(5)$$

$$V = 60$$

f A sphere with a radius of 2

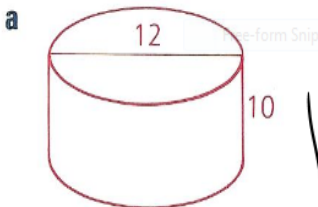
$$V = \frac{4}{3} \pi r^3$$

$$\frac{4}{3} \pi 2^3$$

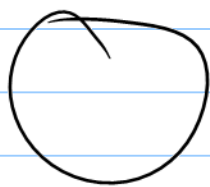
$$\frac{4}{3} \pi 8$$

$$\frac{32}{3} \pi$$

3 Find the volume and the total surface area of each solid.



$$V = Bh$$



$$\pi r^2 h$$

$$\pi 6^2 10$$

$$360\pi$$

SA

$$= 2\pi rh + 2B$$

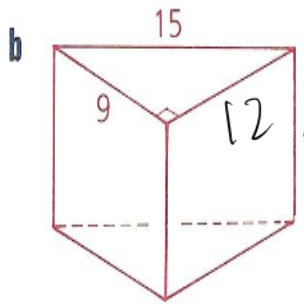
$$2\pi 6 \cdot 10 + 2B$$

$$\pi 120 + 2\pi r^2$$

$$\pi 120 + 2\pi 6^2$$

$$\pi 120 + 72\pi$$

$$192\pi$$



$$LA = 12 \cdot 10 + 9 \cdot 10 + 15 \cdot 10$$

$$120 + 90 + 150$$

$$LA = 360$$

$$SA = LA + 2B$$

$$SA = 360 + 2(54)$$

$$SA = 360 + 108$$

$$SA = 468$$

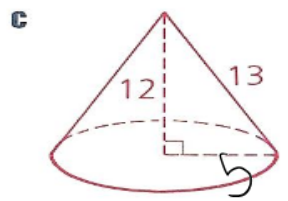
$$\begin{array}{r} 54 \\ \times 2 \\ \hline 108 \end{array}$$

$$V = Bh$$

$$\frac{1}{2}(2 \cdot 9) \cdot 10$$

$$54 \cdot 10$$

$$V = 540$$



V

$$V = Bh \left( \frac{1}{3} \right)$$

$$\pi r^2$$

$$25 \pi \cdot h$$

$$25 \pi \cdot 12$$

$$300 \pi = \frac{1}{3}$$

$$100 \pi$$

SA

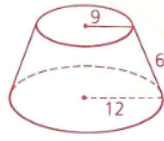
$$SA = \pi r l + \pi r^2$$

$$5 \cdot 13$$

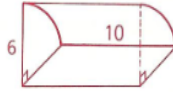
$$\frac{5}{5} \pi + 25 \pi$$

$$30 \pi$$

21 A frustum of a cone is shown. Find the volume of this solid.



19 A cylinder is cut into four equal parts.  
Find the total area of the part shown.



- 17 A hole with a diameter of 2 in. is drilled through a block as shown. Find the volume of the resulting solid to the nearest cubic inch.

