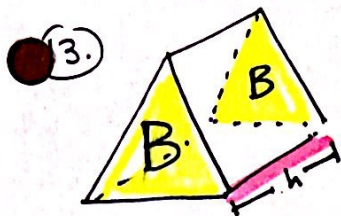
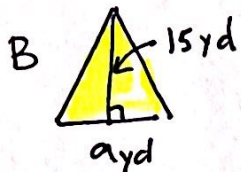


11.2 p. 754 - 756 (13-39) odd



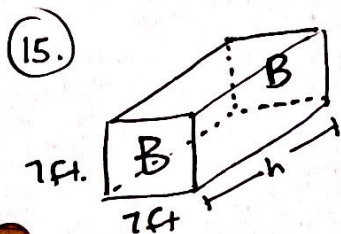
Volume of this Δ prism

$$V = Bh$$



$$B = \frac{15(9)}{2} = \frac{135}{2} = 67.5$$

$$V = Bh = \left(\frac{135}{2}\right)\left(\frac{12}{1}\right) = 135(6) = 810 \text{ yd}^3$$



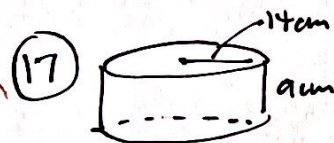
Square prism

$$B = 49 \text{ ft}^2$$

$$h = 7 - 2 = 5 \text{ ft}$$

$$V = Bh = 49(5)$$

$$= 245 \text{ ft}^3$$



$$V = \pi r^2 h \text{ or } Bh = \pi(14)^2(9) = \pi(196)(9)$$

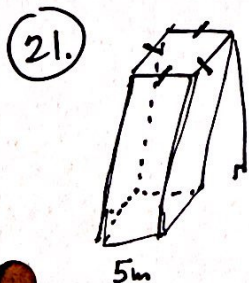
$$= 1764\pi \text{ cm}^3 \approx 5541.8 \text{ cm}^3$$



$$B = 24\pi \text{ cm}^2$$

$$V = B \cdot h = 24\pi(16)$$

$$= 384\pi \text{ cm}^3 \approx 1206.4 \text{ cm}^3$$



$$V = Bh = (5)^2(10) = 250 \text{ m}^3$$

dimensions mult by $\frac{3}{5}$



$$10\left(\frac{3}{5}\right) = 6$$

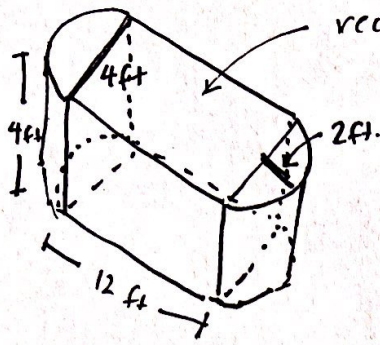
$$5\left(\frac{3}{5}\right) = 3$$

$$V = Bh = (3)^2 \cdot 6 = 9 \cdot 6 = 54 \text{ m}^3$$

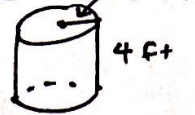
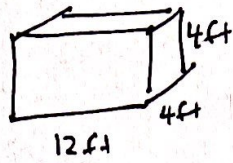
$$250 \cdot \left(\frac{3}{5}\right)^3 = \frac{250 \cdot 27}{125} = 54$$

The new volume is $\left(\frac{3}{5}\right)^3$ or $\frac{27}{125}$ multiplied by

23.



rectangular prism + cylinder



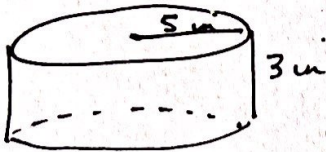
$$V = lwh + \pi r^2 h$$

$$= 12(4)(4) + \pi(2)^2(4)$$

$$= (192 + 16\pi) \text{ ft}^3$$

$$\approx 192 + 50.3 \approx 242.3 \text{ ft}^3$$

25.

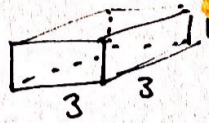


a. $V = \pi r^2 h$

$$= \pi(5)^2(3)$$

$$75\pi \approx 235.6 \text{ m}^3$$

b.



$$V = 3 \cdot 3 \cdot 1 = 9 \text{ m}^3$$

$$P = \frac{9}{235.6} \approx .038 \approx .04$$

27.

$$V = lwh$$

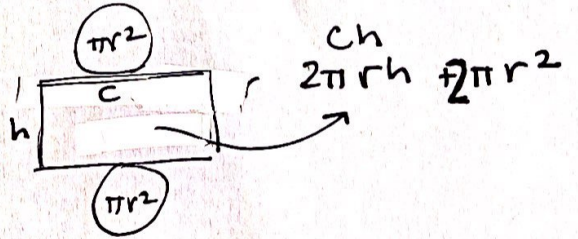
$$495 = 5(9)h$$

$$495 = 45h$$

$$h = 11 \text{ ft}$$

29.

SA of a cylinder



$$SA = 210\pi$$

$$h = 8$$

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

$$210\pi = 2\pi r(8) + 2\pi r^2$$

$$\frac{210\pi}{2\pi} = \frac{16\pi r}{2\pi} + \frac{2\pi r^2}{2\pi}$$

$$105 = 8r + r^2$$

$$r^2 + 8r - 105 = 0$$

$$(r + 15)(r - 7) = 0$$

$$r = -15 \leftarrow \text{NO!}$$

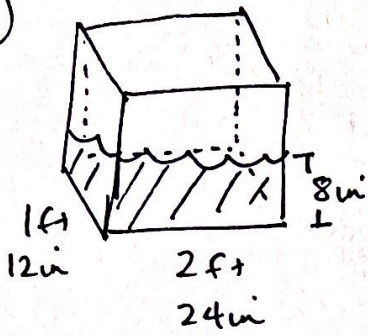
$$r = 7$$

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

$$= \pi(7)^2(8)$$

$$392\pi \text{ m}^3$$

31



Volume of water

$$V = lwh$$

$$= 24(12)(8)$$

$$= 2304 \text{ in}^3$$

Volume of water w/ stone

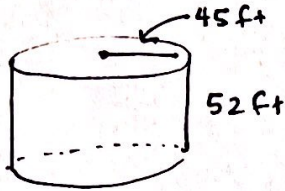
$$V = (24)(12)(8+2)$$

$$= 24(12)(10)$$

$$= 2880 \text{ in}^3$$

$$2880 - 2304 = 576 \text{ in}^3$$

33



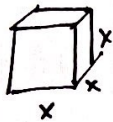
$$V = \pi r^2 h$$

$$= \pi (45)^2 (52)$$

$$= 105300\pi \text{ ft}^3$$

Now convert $\frac{105300\pi \text{ ft}^3}{1} \cdot \frac{1 \text{ gal}}{0.134 \text{ ft}^3} \approx 2468729 \text{ gal}$ Wow!

35

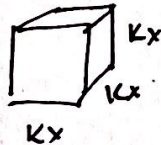


S of cube $6x^2$

V of cube $V = x^3$

S:V $6x^2 : x^3$ or $\frac{6}{x}$

mult by k

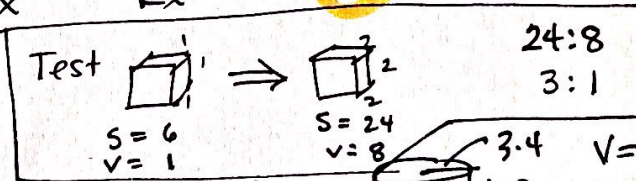


S = $6(kx \cdot kx)$
 $= 6k^2x^2$

V = $(kx)^3$
 $= k^3x^3$

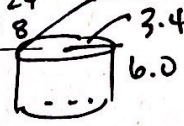
S:V $6k^2x^2 : k^3x^3$ $\frac{6}{kx}$

For a scale factor of k the ratio of surface area (S) to volume (V) of the new prism is $\frac{6}{x}$ to $\frac{6}{kx}$ or $\frac{1}{k}$ times the ratio of old surface area and volume



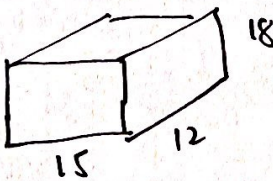
$S = 6$
 $V = 1$

$S = 24$
 $V = 8$



$V = \pi (3.4)^2 (6)$
 ≈ 217.9

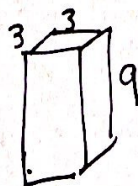
37 A



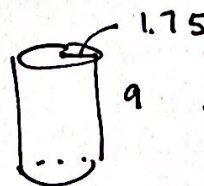
$V = 15(12)(18)$
 3240 cm^3

$\frac{3240}{217.9} \approx 14.86$ whole candles

39 B



$V = 3 \cdot 3 \cdot 9$
 81 in^3



$V = \pi (1.75)^2 (9)$
 ≈ 86.6

larger