

Volume - Practice Test

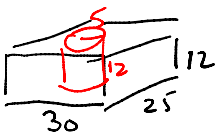
page 278 1 → 8, 11 → 13, 16

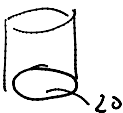
1. $2 \times 12 \times 5.5 = 132 \text{ cm}^3$ **C**

2. $\left(\frac{7.5 \times 6.8}{2}\right) \times 7.2 = 183.6 \text{ cm}^3$ **B**

3. $8 \times 8 \times 8 = 512 \text{ cm}^3$ **D**


4. $\pi(3.75)^2(24) = 1059.75 \text{ cm}^3$ **C**

5.  $V_{\text{box}} - V_{\text{cyl}} = (30 \times 25 \times 12) - (\pi(5)^2 \times 12)$
 $9000 - 942$
 8058 **B**



b.  $V = \pi r^2 h$
 $140 = 20h$
 $7 = h$ **7 cm** ← proper units!

7. $3 \times 4 \times 6 = 72 \text{ cm}^3$

8. $V = \pi(28)^2(84.1)$
 $= 207034.0 \text{ cm}^3$

#9. me box =  $V = 19.5 \times 18 \times 9.5$
 $= 5044.5 \times 12$
 so 12 of them = 60534 cm^3

#10. $V = \pi(5)^2(17.5)$
 $= 1373.75 \text{ cm}^3$ or 1373.75 ml .

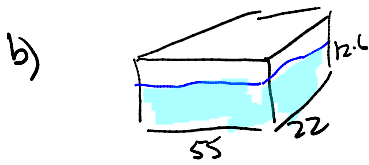
#11.  $V = \pi(7)^2(80)$
 $V = 12308.8 \text{ cm}^3$  $V = \left(\frac{20 \times 14}{2}\right) \times 80$
 $V = 11,200 \text{ cm}^3$
 ↑ larger volume

12. $V_{\text{box}} - V_{\text{cyl}} = (45 \times 45 \times 45) - (\pi(17)^2 \times 45)$
 $91125 - 40835.7$
 50289.3 cm^3

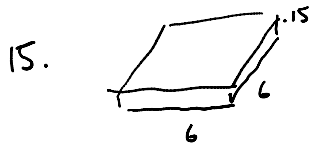
13. outside $V = 2.5 \times 2 \times 2 = 10 \text{ m}^3$ inside $V = (3.14)(0.375)^2(1.2) = 0.5299 \text{ m}^3$

$$\frac{10 \text{ m}^3}{0.5299 \text{ m}^3} = 18.87 \dots \rightarrow \text{so at most 18 bins fit into the outside bin.}$$

14. a) $V = (18 \times 55 \times 22) = 21780 \text{ cm}^3 = 21.78 \text{ L}$



$$V = 55 \times 22 \times 12.6 = 15246 \text{ cm}^3 = 15.25 \text{ L}$$



a) $V = 6 \times 6 \times 1.5 = 5.4 \text{ m}^3$

b) $5.4 \times \$110 = \594

16. a) $4 \times 3 \times 1$ or $2 \times 6 \times 1$ or $2 \times 2 \times 3$



b) $V = 40 \times 30 \times 25 = 30,000 \text{ cm}^3$

$V = 20 \times 60 \times 25 = 30,000 \text{ cm}^3$

$V = 20 \times 20 \times 75 = 30,000 \text{ cm}^3$

c)
$$V_{\text{cyl}} = \pi(5)^2(25) = 1962.5 \times 12 = 23,550 \text{ cm}^3$$

$30,000 - 23,550 = 6,450 \text{ cm}^3$ empty space

d) A cube gives the least SA. So. $40 \times 30 \times 25$ gives least SA. (closest to a cube)