

7.5
P. 427 #3.c)

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

$$V = \frac{4}{3} (3.14) (0.9)^3$$

$$V = \frac{4}{3} (3.14) (0.729)$$

$$V = \frac{4}{3} (2.28906)$$

$$V = \frac{9.15624}{3}$$

$$V = 3.05208 \text{ m}^3$$
$$V \approx 3.1 \text{ m}^3$$

$$d = 1.8 \text{ m}$$

$$r = 0.9 \text{ m} = \frac{1.8}{2}$$

June 6th

7.5 pg 427 #6

a) volume of each orange (* 7.5cm = circumference of each chocolate orange)

$$= \frac{4}{3} \pi \left(\frac{7.5 \text{ cm}}{2} \right)^3$$

$$= \frac{4}{3} \pi 3.75^3$$

$$= 220.87 \text{ cm}^3$$

b) empty space = V of cube - V of oranges

$$\begin{aligned} (* \text{ V of cube} &= 7.5 \text{ cm} \times 7.5 \text{ cm} \times 7.5 \text{ cm} \\ &= 421.88 \text{ cm}^3 \end{aligned}$$

$$= 421.88 \text{ cm}^3 - 220.87 \text{ cm}^3$$

$$= 201.01 \text{ cm}^3$$

to 21.

7.5 pg 427 #3a & #10

#3a) $V = \frac{4}{3}\pi (1)^3$

$V = 4.2 \text{ cm}^3$

e) Circumference = 157.1 cm

$C = \pi d$

$\frac{C}{\pi} = d$

$\frac{157.1}{\pi} = d = 50.006...$

$r = \frac{d}{2} = 25.003 \text{ cm}$

$V = \frac{4}{3}\pi (25.003)^3$

$V = 65475.3 \text{ cm}^3$

#10

$V_{\text{cube}} = (22.28)^3$

$V_c = 11059.76 \text{ cm}^3$

$V_{\text{sphere}} = \frac{4}{3}\pi (11.14)^3$

$V_s = 5790.875 \text{ cm}^3$

$d = 22.28 \text{ cm}$

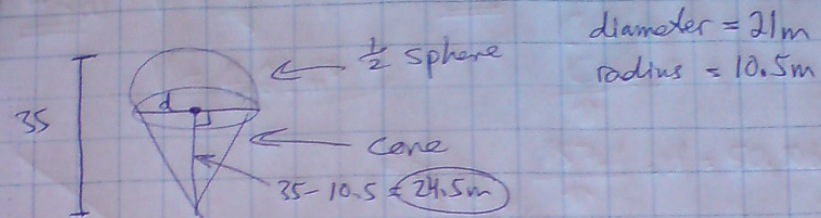
$r = 11.14 \text{ cm}$

$V_{\text{empty space}} = V_c - V_s = 11059.76 - 5790.875$

$V_E = 5268.885 \text{ cm}^3$

$\% \text{ of Empty Space} = \frac{5268.885}{11059.76} = 47.6\% \text{ (48\%)}$

7.5 pg 408 #13



diameter = 21m
radius = 10.5m

$$V_{\text{cone}} = \frac{1}{3} Ah$$

$$V_c = \frac{1}{3} (\pi) (10.5)^2 (24.5)$$

$$V_c = 2828.6 \text{ m}^3$$

$$V_{\frac{1}{2}\text{sphere}} = \left(\frac{4\pi r^3}{3} \right) \div 2$$

$$V_{\frac{1}{2}\text{sp}} = \left(\frac{4\pi (10.5)^3}{3} \right) \div 2$$

$$V_{\frac{1}{2}\text{sphere}} = 2424.52 \text{ m}^3$$

$$V_{\text{balloon}} = V_c + V_{\frac{1}{2}\text{sphere}} = 2828.6 + 2424.52$$

$$V_{\text{balloon}} = 5253.1 \text{ m}^3$$