p. 64

3d. 123 in to yards, feet, and inches

$$123\ \text{in} \times \frac{1\ \text{ft}}{12\ \text{in}} \times \frac{1\ \text{yd}}{3\ \text{ft}} = 3.4166\ldots\ \text{yd}$$

3 yd

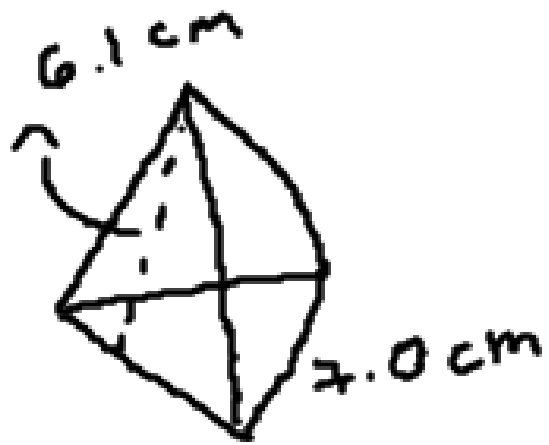
$$0.4166\ \text{yd} \times \frac{3\ \text{ft}}{1\ \text{yd}} = 1.2498\ \text{ft}$$

1 ft

$$0.2498\ \text{ft} \times \frac{12\ \text{in}}{1\ \text{ft}} = 2.9976 \approx 3\ \text{in}$$

3 yd, 1 ft, 3 in

9b.



$SA = 4\Delta = 4\left(\frac{bh}{2}\right) = 4\left(\frac{(7.0)(6.1)}{2}\right) = 85.4\ cm^2$

$= 2bh = 2(7.0)(6.1) = 85.4\ cm^2$

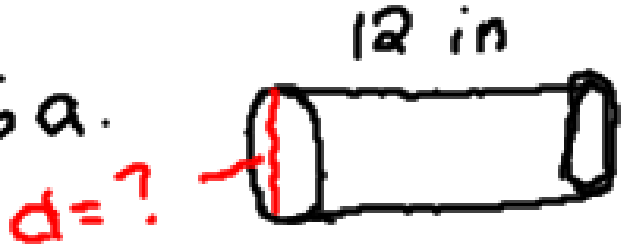
$V = \frac{1}{3}(\text{area of base}) \times h$

p. 60

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

2 circles

6a.



curved $SA = 219\ in^2 = 2\pi rh$

① Find radius (r)

② $d = 2r$

$219 = 2\pi r(12)$

$219 = 24\pi r$

$\frac{219}{75.3982} = \frac{75.3982\,r}{75.3982}$

$2.9046 = r$ ①

$d = 2(2.9046) = 5.8092\ in$

$d = 5.8\ in$

b) $SA_{ROCKET} = \overbrace{\pi r s}^{\text{nose or cone}} + \overbrace{\pi r^2 + 2\pi r h}^{\text{cyl. or body}}$

$SA_{CONE} = \cancel{\pi r^2} + \pi r s$

$SA_{cyl} = \cancel{2}\pi r^2 + 2\pi r h$

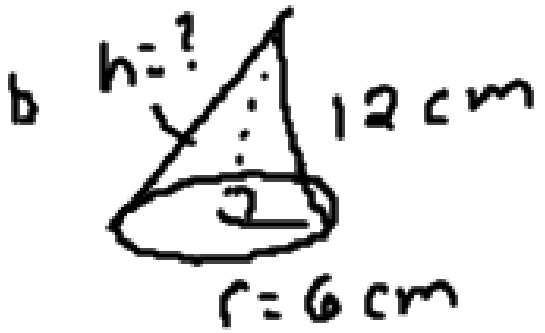
$SA = \pi(6)(12) + \pi(6)^2 + 2\pi(6)(55)$

$SA = 226.1947 + 113.0973 + 2073.4512$

b) $SA = 2413\ cm^2$

$V_{ROCKET} = V_{CONE} + V_{cyl}$

$V_R = \frac{\pi r^2 h}{3} + \pi r^2 h$



$c^2 = a^2 + b^2$

$12^2 - (6)^2 = b^2$

$144 - 36 = b^2$

$\sqrt{108} \quad \sqrt{b}$

$b = h = 10.392$ cm

$V_R = \frac{\pi(6)^2(10.392)}{3} + \pi(6)^2(55)$

$= 391.769 + 6220.353$

$V_R = 6612 \text{ cm}^3$

c)

d) $\frac{1}{3} V_R$ = fuel storage

$\frac{6612}{3} = 2204 \text{ cm}^3$

Review p. 64-66

Pratice Test p. 67