

$$\text{Cyl: } LA = 2\pi rh$$

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

$$\text{Cone: } LA = \pi r l$$

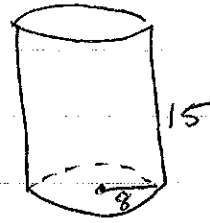
$$V = \frac{1}{3} \pi r^2 h$$

Pg. 492 # 4-8, 13-21

4) $r=8$ $h=15$

$$LA = 2\pi(8)(15)$$

$$= 240\pi u^2$$



$$TA = 240\pi + 2\pi(8)^2$$

$$= 240\pi + 128\pi$$

$$= 368\pi u^2$$

$$V = \pi(8)^2(15)$$

$$= 960\pi u^3$$

5) $64\pi = \pi r^2(r)$

$$64 = r^3$$

$$4u = r$$

6) $18\pi = 2\pi r(6)$

$$18 = 12r$$

$$1.5 = r$$

7) $72\pi = \pi r^2(8)$

$$72 = 8r^2$$

$$9 = r^2$$

$$3 = r$$

$$LA = 2\pi(3)(8)$$

$$= 48\pi u^2$$

8) $100\pi = 2\pi rh + 2\pi r^2$

$$\frac{100\pi}{2\pi} = \frac{2\pi r(h+r)}{2\pi}$$

$$50 = r(r+r)$$

$$50 = 2r^2$$

$$25 = r^2$$

$$5 = r$$

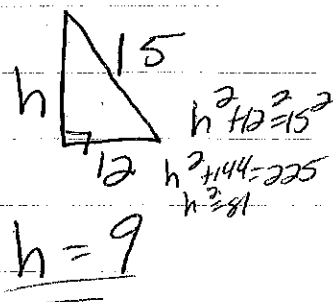
Cone: $LA = \pi r l$
 $V = \frac{1}{3} \pi r^2 h$

13) $l = 15$
 $LA = 180\pi$

$180\pi = \pi r (15)$

$180 = 15r$

$12 = r$



$h = 9$

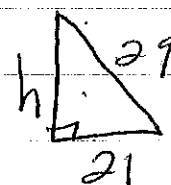
$TA = 180\pi + \pi r^2$
 $= 180\pi + \pi (12)^2$
 $= \underline{324\pi u^2}$

$V = \frac{1}{3} \pi (12)^2 (9)$
 $= \underline{432\pi u^3}$

14) $r = 21$
 $LA = 609\pi$

$609\pi = \pi (21) l$

$29 = l$



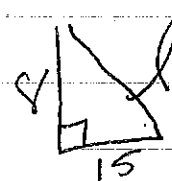
$TA = 609\pi + \pi (21)^2$
 $= 609\pi + 441\pi$
 $= \underline{1050\pi u^2}$

$h^2 + 21^2 = 29^2$
 $h^2 + 441 = 841$
 $h^2 = 400$
 $h = 20$

$TA = \underline{1050\pi u^2}$

$V = \frac{1}{3} \pi (21)^2 (20)$
 $= \underline{2940\pi u^3}$

15) $r = 15$
 $V = 600\pi$



$l^2 = 8^2 + 15^2$
 $l^2 = 64 + 225$
 $l^2 = 289$
 $l = 17$

$600\pi = \frac{1}{3} \pi (15)^2 h$
 $600 = \frac{1}{3} \cdot 225 h$
 $600 = 75h$
 $8 = h$

$SA = \pi (15) (17)$
 $= \underline{255\pi u^2}$

P.493

15) Continued

$$\begin{aligned} TA &= 255\pi + \pi(15)^2 \\ &= 255\pi + 225\pi \\ &= \underline{480\pi} u^2 \end{aligned}$$

16) $r=9$

$V=324\pi$

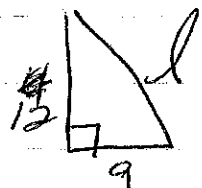
$324\pi = \frac{1}{3}\pi(9)^2 h$

$324 = \frac{1}{3}81 h$

$324 = 27h$

$\underline{12 = h}$

$$\begin{aligned} SA &= \pi(9)(15) \\ &= 135\pi u^2 \end{aligned}$$



$12^2 + 9^2 = l^2$

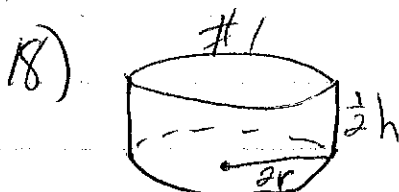
$144 + 81 = l^2$

$225 = l^2$

$\underline{15 = l}$

$$\begin{aligned} TA &= 135\pi + \pi(9)^2 \\ &= 135\pi + 81\pi \\ &= 216\pi u^2 \end{aligned}$$

17) Can't do - Sorry, didn't mean to assign this

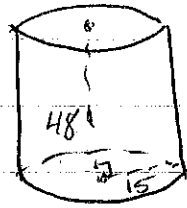
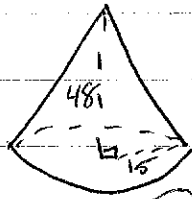


$$\begin{aligned} V_{\#1} &= \pi(2r)^2\left(\frac{1}{2}h\right) \\ &= 2\pi r^2 h \end{aligned}$$

$$\begin{aligned} V_{\#2} &= \pi(r)^2(h) \\ &= \pi r^2 h \end{aligned}$$

wider holds more 2:1 ratio

19)



1:3 ratio

$$V = \frac{1}{3}\pi r^2 h$$

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

20) a) Various Answers

b) Can: $V = \pi (2.5)^2 (10)$
 $= 62.5\pi \text{ cm}^3$

bottle: $V = \frac{1}{3}\pi (2)^2 (6)$
 $+ \pi (2)^2 (10)$
 $= \frac{1}{3} \cdot 24\pi + 40\pi$
 $= 8\pi + 40\pi$
 $= 48\pi \text{ cm}^3$

Can holds more

21) $V_{\text{cyl}} = \pi (6)^2 (18)$
 $= 648\pi$

$$V_{\text{cone}} = \frac{1}{3}\pi (9)^2 h$$

$$648\pi = 27\pi h$$

$$648 = 27h$$

$$24 \text{ cm} = h$$