NAME P. Wells (Geometry) DATE PER.

Unit 10 REVIEW

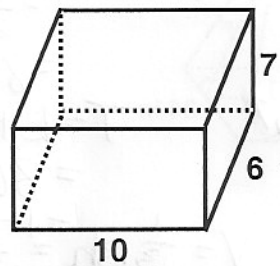
PART 1. AREA & VOLUME OF PRISMS

For each of the following prisms, find the a)Lateral Area, b)Surface Area, and c) Volume.

1. $\overset{L}{\cancel{LA}} = 224\ u^2$

$\overset{T}{\cancel{SA}} = 344\ u^2$

$V = 420\ u^3$



$L = ph$
$= 32(7)$
$= 224$

$T = L + 2B$
$= 224 + 2(60)$
$= 344$

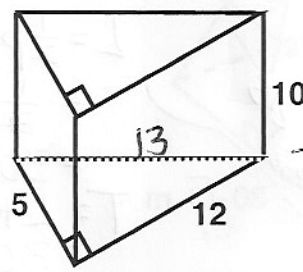
$V = Bh = 60(7) = 420$

$p = 32$
$B = 60$
$h = 7$

2. $\overset{L}{\cancel{LA}} = 300\ u^2$

$\overset{T}{\cancel{SA}} = 360\ u^2$

$V = 300\ u^3$



$L = ph$
$= 30(10)$
$= 300$

$T = L + 2B$
$= 300 + 2(30)$
$= 360$

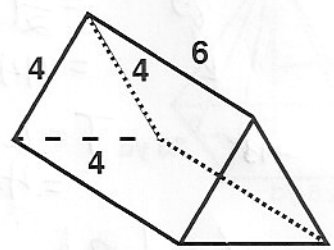
$V = Bh$
$= 30(10) = 300$

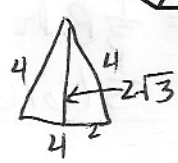
$p = 30$
$B = \frac{1}{2}bh = \frac{1}{2}(5)(12)$
$= 30$
$h = 10$

3. $\overset{L}{\cancel{LA}} = 72\ u^2$

$\overset{T}{\cancel{SA}} = 85.86\ u^2$

$V = 41.58\ u^3$





$L = ph$
$= 12(6)$
$= 72$

$T = L + 2B$
$= 72 + 2(6.93)$
$= 85.86$

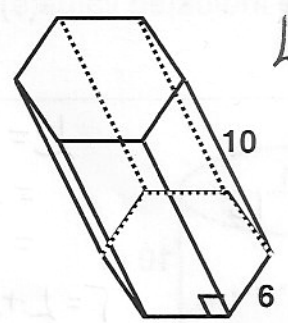
$V = Bh = (6.93)(6) = 41.58$

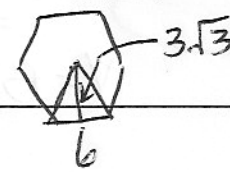
$p = 12$
$B = \frac{1}{2}bh$
$= \frac{1}{2}(4)(2\sqrt{3})$
$= 4\sqrt{3} \approx 6.93$
$h = 6$

4. $\overset{L}{\cancel{LA}} = 360\ u^2$

$\overset{T}{\cancel{SA}} = 547.06\ u^2$

$V = 935.3\ u^3$





$L = ph$
$= 36(10)$
$= 360$

$T = L + 2B$
$= 360 + 2(93.53)$
$= 547.06$

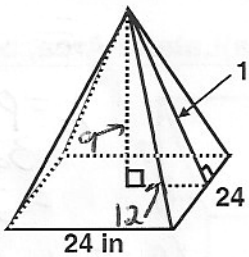
$V = Bh$
$= 93.53(10) = 935.3$

$p = 36$
$B = \frac{1}{2}ap$
$= \frac{1}{2}(3\sqrt{3})(36)$
$= 54\sqrt{3} \approx 93.53$
$h = 10$

PART 2. AREA & VOLUME OF PYRAMIDS

Find the Lateral Area, Surface Area, and Volume for each of the following regular pyramids.

5. L = 864 in.²
   T = 1440 in.²
   V = 1728 in.³



$L = \frac{1}{2}pl = \frac{1}{2}(144)(12) = 864$

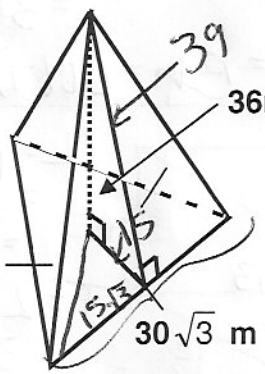
$T = L + B = 864 + 576 = 1440$

$V = \frac{1}{3}Bh = \frac{1}{3}(576)(9) = 1728$

$p = 144$, $B = 576$, $h = 9$, $l = 12$

6. L = 3039.75 m²
   T = 4208.88 m²
   V = 14029.56 m³

$V = \frac{1}{3}Bh = \frac{1}{3}(1169.13)(36)$



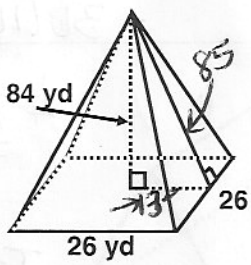
BONUS on TEST

$L = \frac{1}{2}pl = \frac{1}{2}(90\sqrt{3})(39) = 3039.75$

$T = L + B = 3039.75 + 1169.13 = 4208.88$

$p = 90\sqrt{3}$, $B = \frac{1}{2}ap = \frac{1}{2}(15)(\ldots) = 1169.13$, $h = 36$, $l = 39$

7. L = 4420 yd.²
   T = 5096 yd.²
   V = 18,928 y³



$L = \frac{1}{2}pl = \frac{1}{2}(104)(85) = 4420$

$T = L + B = 4420 + 676 = 5096$

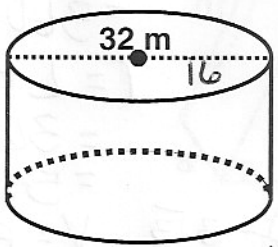
$V = \frac{1}{3}Bh = \frac{1}{3}(676)(84) = 18928$

$p = 104$, $B = 676$, $h = 84$, $l = 85$

PART 3. CYLINDERS, CONES, AND SPHERES

For each of the problems below, find the indicated value(s). Leave your answers in terms of π.

8. L = 320π m²
   T = 576π m²
   V = 2560π m³



$L = ph = 32\pi(10) = 320\pi$

$T = L + 2B = 320\pi + 256\pi = 576\pi$

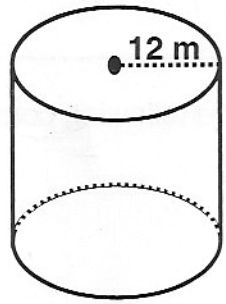
$V = Bh = 256\pi(10) = 2560\pi$

$p = \pi d = 32\pi$, $B = \pi r^2 = 256\pi$, $h = 10$

9. ~~LA~~ L = $264\pi\ m^2$

~~SA~~ T = $552\pi\ m^2$

V = $1584\pi\ m^3$



$L = ph$
$= 24\pi(11)$
$= 264\pi$

$p = 24\pi$
$B = \pi r^2 = 144\pi$
$h = 11$

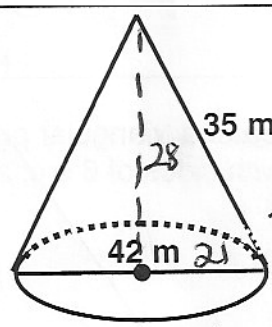
$T = L + 2B$
$= 264\pi + 2(144\pi) = 552\pi$

$V = Bh = 144\pi(11)$

10. ~~LA~~ L = $735\pi\ m^2$

~~SA~~ T = $1176\pi\ m^2$

V = $2940\pi\ m^3$



$L = \frac{1}{2}pl$
$= \frac{1}{2}(42\pi)(35)$
$= 735\pi$

$p = 2\pi r = 42\pi$
$B = \pi r^2 = 441\pi$
$h = 20$
$l = 35$

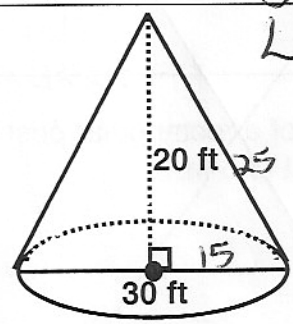
$T = L + B$
$= 735\pi + 441\pi = 1176\pi$

$V = \frac{1}{3}Bh = \frac{1}{3}(441\pi)(20)$

11. ~~LA~~ L = $375\pi\ ft^2$

~~SA~~ T = $600\pi\ ft^2$

V = $1500\pi\ ft^3$



$L = \frac{1}{2}pl$
$= \frac{1}{2}(30\pi)(25)$
$= 375\pi$

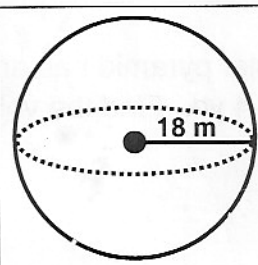
$p = 2\pi r = 30\pi$
$B = \pi r^2 = 225\pi$
$h = 20$
$l = 25$

$T = L + B$
$= 375\pi + 225\pi = 600\pi$

$V = \frac{1}{3}Bh = \frac{1}{3}(225\pi)(20)$

12. ~~SA~~ T = $1296\pi\ m^2$

V = $7776\pi\ m^3$

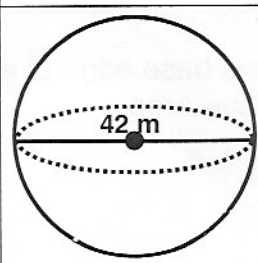


$T = 4\pi r^2$
$= 4\pi(18)^2$
$= 1296\pi$

$V = \frac{4}{3}\pi r^3$
$= \frac{4}{3}\pi(18)^3$
$= 7776\pi$

13. ~~SA~~ T = $1764\pi\ m^2$

V = $12348\pi\ m^3$



$T = 4\pi r^2$
$= 4\pi(21)^2$
$= 1764\pi$

$V = \frac{4}{3}\pi r^3$
$= \frac{4}{3}\pi(21)^3$
$= 12348\pi$