Math 142 – section ___Sample Quiz___ 15   NAME: ___Key___

Th March 29, 2007

Quiz #8 – Spring 2007

Sections 13.3   Seat: _____
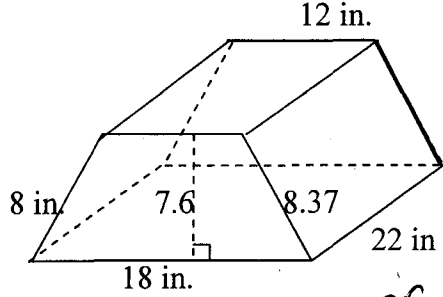
3 pts each
-1 pt smaller
-2 more erro
-3 if mostly wrong

Turn in homework problems page 688, Section 13.3, Set B # 1a,c, 2a,c and 6.

1a. Surface area of trapezoidal prism.

12 in.

8 in   7.6   8.37

18 in.   22 in

$SA = 2\square + 4$ different rectangles

(or 1 large rectangle)
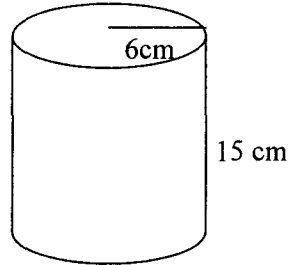
$SA = 2\left[\frac{1}{2}(18+12)\cdot 7.6\right] + 8(22) + 18(22) + (8.37)(22) + 12(22)$

or $SA = 2(114) + (8+18+8.37+12)(22)$

$SA = 228 + (46.37)22 -$

$= 228 + 1020.14 = \boxed{1248.14}$
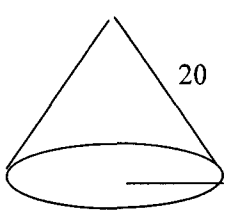
1c. Surface area of cylinder.

6 cm

15 cm

$SA = 2(\pi 6^2) + (2\pi 6)(15)$

$SA = 72\pi + 180\pi$

$SA = 252\pi$

$SA \approx 791.68 \approx \boxed{792 \, cm^2}$
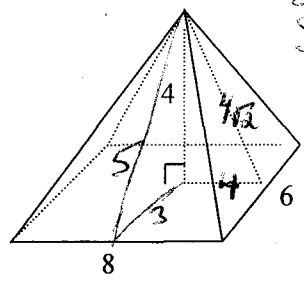
2.a. Surface area of cone.

20

radius = 12

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

$SA = 144\pi + \pi(12)(20)$

$SA = 144\pi + 240\pi$

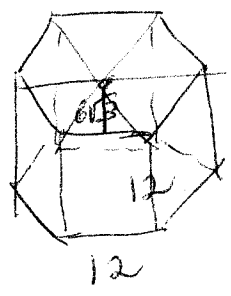$SA = 384\pi$

$SA \approx 1206$

c. Surface area of pyramid.

4   4√2

5

3   4

8   6

$SA = \square + 2 \triangle s + 2 \triangle s$

$SA = 8\cdot 6 + 2\left[\frac{1}{2}\cdot 8\cdot 5\right] + 2\left[\frac{1}{2}\cdot 6\cdot 4\sqrt{2}\right]$

$= 48 + 40 + 33.94$

$= \boxed{121.94 \, sq \, units}$

6. Surface area of a regular hexagonal prism with edges of 12 cm.

6√3   12   12

$SA = 2 \, hexagons + 6 \, \square s$

$SA \approx 2(374.12) + 6(12)(12)$

$SA \approx 748.25 + 864$

$SA \approx 1612.25 \, cm^2$

hexagon $= 6\triangle s$

$= 6\left[\frac{1}{2}(12)(6\sqrt{3})\right]$

or $= \frac{1}{2}Pr$

$= \frac{1}{2}(72)(6\sqrt{3})$

$= 216\sqrt{3}$

374.12