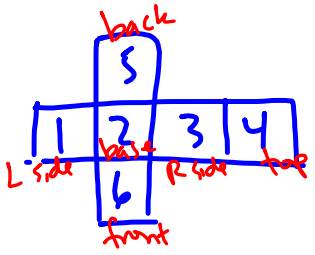
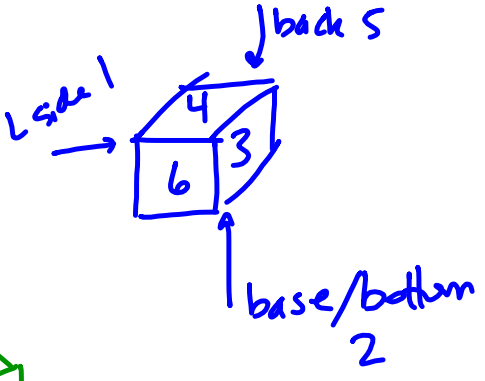
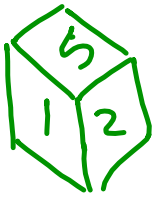
14.3B #9(a)

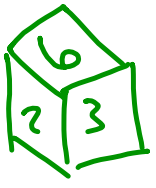




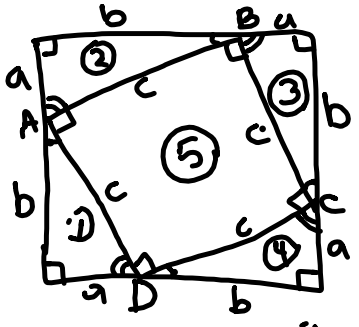
(2)



(3)



Pf of Pythagorean Thm



(a+b)

1, 2, 3, 4

The inner quadrilateral ABCD is a square
side lengths c are $\cong$
$\angle m = 90°$

Total Area = $(a+b)^2$

Total Area of pieces = $4(\frac{1}{2}ab) + c^2$
(Δs) ($\square$)

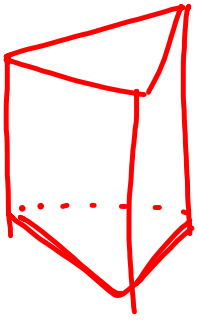
Total Area = Total area of pieces

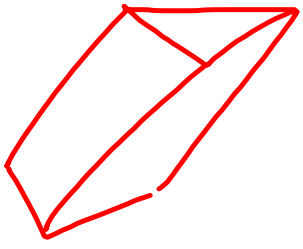
$(a+b)^2 = 4(\frac{1}{2}ab) + c^2$

$a^2 + 2ab + b^2 = 2ab + c^2$
$-2ab \quad -2ab$

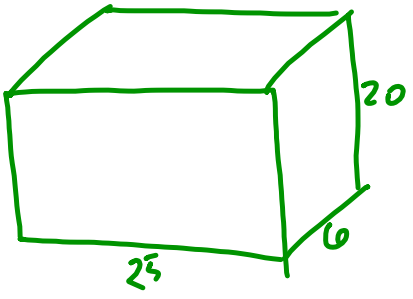
$a^2 + b^2 = c^2$

14.3B #1a)

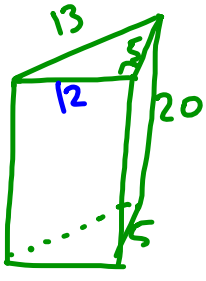




Swimming pool



$V =$ —



$$V = 25(6)(20) - \left(\frac{1}{2}(12)(5)\right)20 = 3000 - 600$$
$$= 2400\ m^3$$

Midterm 2 Topics

- Tesselation
- Area of polygons / circles
- Pythagorean Thm
- 3-d shapes
  - Euler's Formula
  - Platonic Solids
    - tetrahedron face: △
    - dodecahedron face: ⬠
    - cube (hexahedron) face: □
    - icosahedron face: △
    - octahedron face: △
  - SA
  - Volume
  - Scaling length 3:4 ⇒ SA 9:16 and V 27:64
- conversion of measurements
  - temperature

Chp 4 Rev #27) (m) $52\,813\text{ g} = \underline{52.813}\text{ kg}$ $1000\text{ g} = 1\text{ kg}$

(k) $25\text{ m}^3 = \underline{25\,000}\text{ dm}^3$

$10\text{ dm} = 1\text{ m}$

$10\text{ dg} = 1\text{ g}$

$25\text{ m} = \underline{250}\text{ dm}$ $52813\text{ g}\left(\frac{1\text{ kg}}{1000\text{ g}}\right)$

$25\text{ m}^3\left(\frac{10\text{ dm}}{1\text{ m}}\right)\left(\frac{10\text{ dm}}{1\text{ m}}\right)\left(\frac{10\text{ dm}}{1\text{ m}}\right) = 25000\text{ dm}^3$

ex

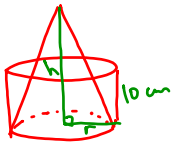
$3\text{ km}^3 = \underline{3(10^{15})}\text{ cm}^3$

$\left(1\text{ km} = \underline{10^5}\text{ cm}\right)$ $3\text{ km}^3\left(\frac{10^5\text{ cm}}{1\text{ km}}\right)\left(\frac{10^5\text{ cm}}{1\text{ km}}\right)\left(\frac{10^5\text{ cm}}{1\text{ km}}\right)$

$= 3(10^5)(10^5)(10^5)\text{ cm}^3$

(g) $51.8\text{ l} = \_\_\_\_\_\text{ cm}^3$ $1\text{ ml} = 1\text{ cm}^3$

$51.8\text{ l}\left(\frac{1000\text{ ml}}{1\text{ l}}\right)\left(\frac{1\text{ cm}^3}{1\text{ ml}}\right) = 51{,}800\text{ cm}^3$

23) 

$V_{cyl} = V_{cone}$, $h = ?$

$\pi r^2(10) = \frac{1}{3}\pi r^2 h$

$\frac{\pi r^2(10)}{\pi r^2} = \frac{\frac{1}{3}\pi r^2 h}{\pi r^2}$

$10 = \frac{1}{3}h \Rightarrow$ **$h = 30$ cm**

#22) 

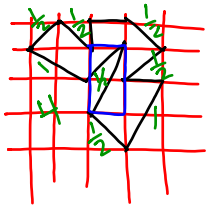
$0.25\ m^2 = 2500\ cm^2$

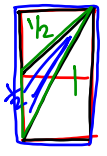
$w = ?$

$2500 = 50(x)$

$x = 50$ cm

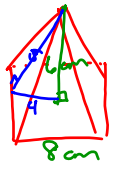
$w = 50 + 6 + 6 =$ **62 cm**

#1c) 



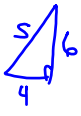
$\sqrt{125} = \sqrt{25 \cdot 5} = \sqrt{25}\sqrt{5} = 5\sqrt{5}$

$\sqrt{72} = \sqrt{9 \cdot 8} = \sqrt{9 \cdot 4 \cdot 2} = 3(2)\sqrt{2} = 6\sqrt{2}$

16) 

right square pyramid

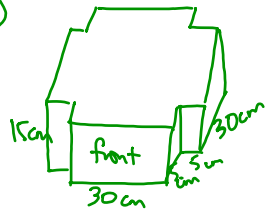
$SA = A + \frac{1}{2}Ps$



$5^2 = 4^2 + 6^2 = 52 \Rightarrow s = \sqrt{52} = 2\sqrt{13}$

$\Rightarrow SA = 64 + \frac{1}{2}(32)(2\sqrt{13})$

$= 64 + 32\sqrt{13}$ or $32(2+\sqrt{13})$ cm^2

15) 

top/bottom 

$A = 40(40) - 4(25)$

$= 1500\ cm^2$

front: 

$A = 30(15) = 450\ cm^2$

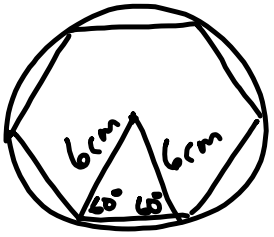
divot: 

$A = 2(5(15)) = 150\ cm^2$

total $A = 2(1500) + 4(450) + 4(150)$

$= 5400\ cm^2$

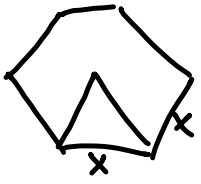
4a)



regular hexagon inscribed in circle.

$A_o = 6^2\pi = 36\pi \text{ cm}^2$

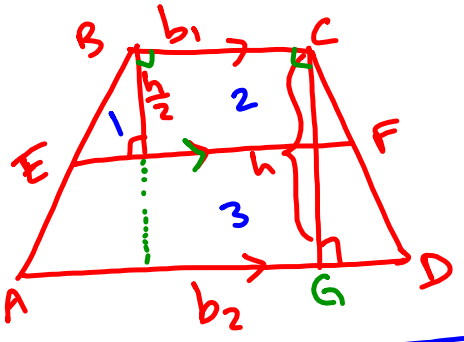
$A_{hex} = \frac{3\sqrt{3}}{2}(6^2) = 54\sqrt{3} \text{ cm}^2$



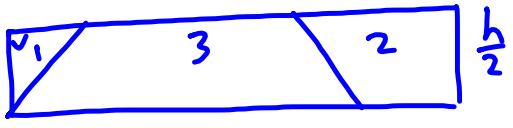
$A = \frac{3\sqrt{3}}{2}x^2$

$A = \frac{\sqrt{3}}{4}y^2$

2)



claim $\overline{EF} \parallel \overline{BC}$



13) (a)