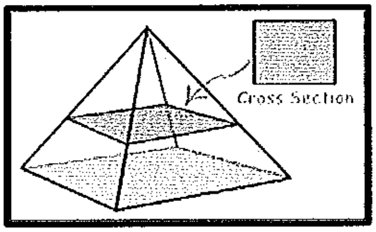


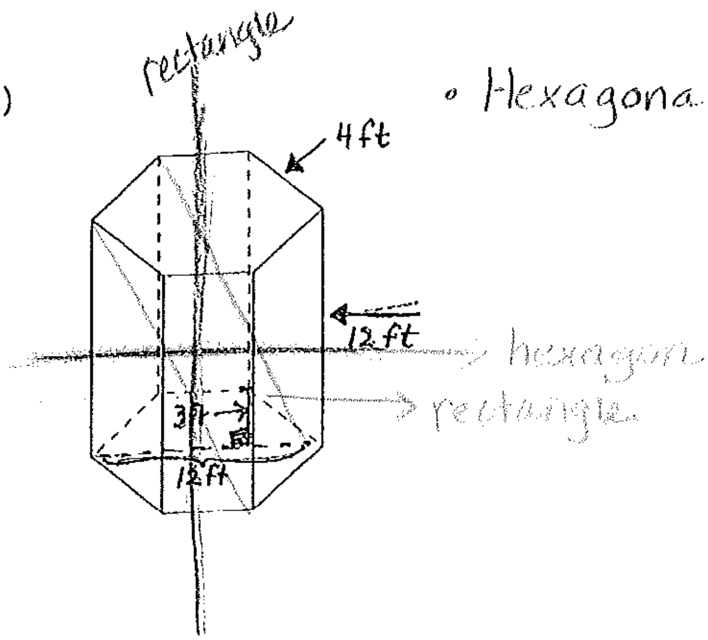
Name *Answers*

Cross Sections
Surface Area and Volume

For each of the solids below,

- Identify the solid by name.
- Sketch two cross sections. One cross section should be parallel to a base, and the other perpendicular to a base. Use different colors.
- Identify each of the cross sections with a name (regular pentagon, triangle, rectangle, circle, etc.)
- Then find the surface area and volume of #1 and #5.

1) Hexagonal Prism



SA = 2 Hexagons
6 Rectangles

Hex = 2

$\frac{1}{2}h(b_1+b_2)$

$\frac{1}{2}(3)(4+12)$

$1.5(16)$

$24\ ft^2$

4 of them = $96\ ft^2$

Rect

$bh = (4)(12)$

$= 48$

6 of them

$48 \times 6 = 288\ ft^2$

Add:

$288 + 96 = \boxed{384\ ft^2}$

V = area of base × h

Area of base = 2

$24 \times 2 = 48$

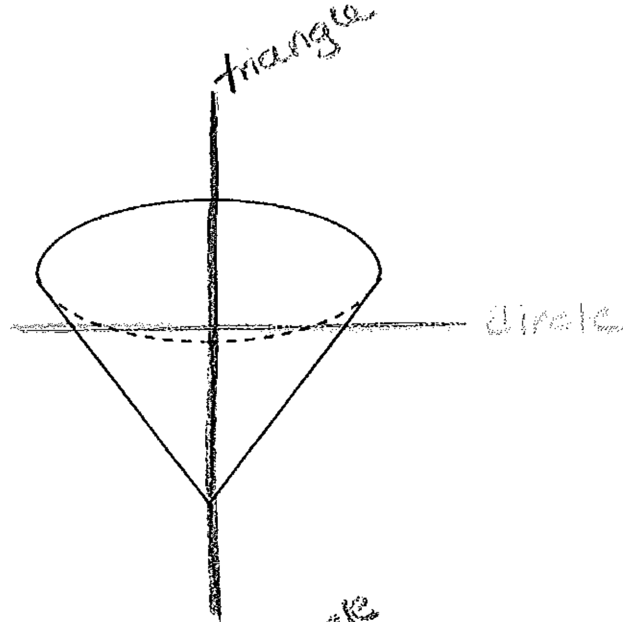
Height

12

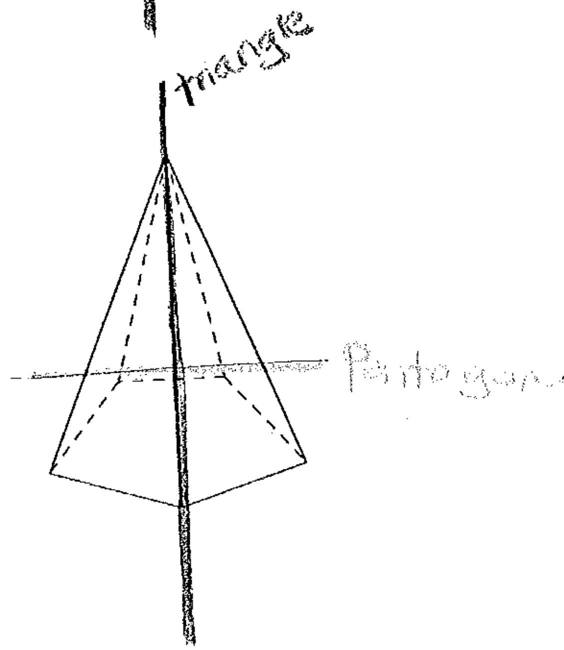
$48 \times 12 =$

$\boxed{576\ ft^3}$

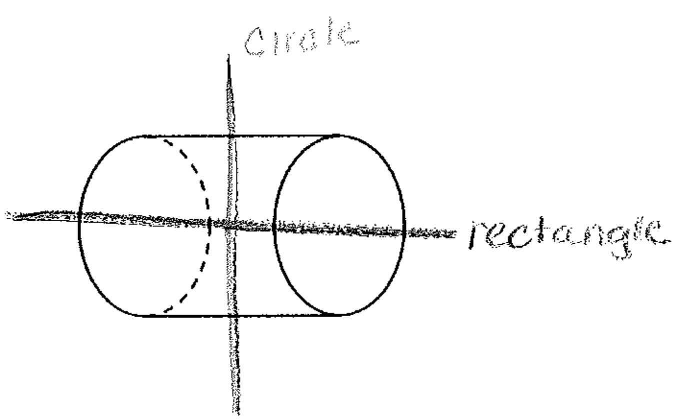
2.



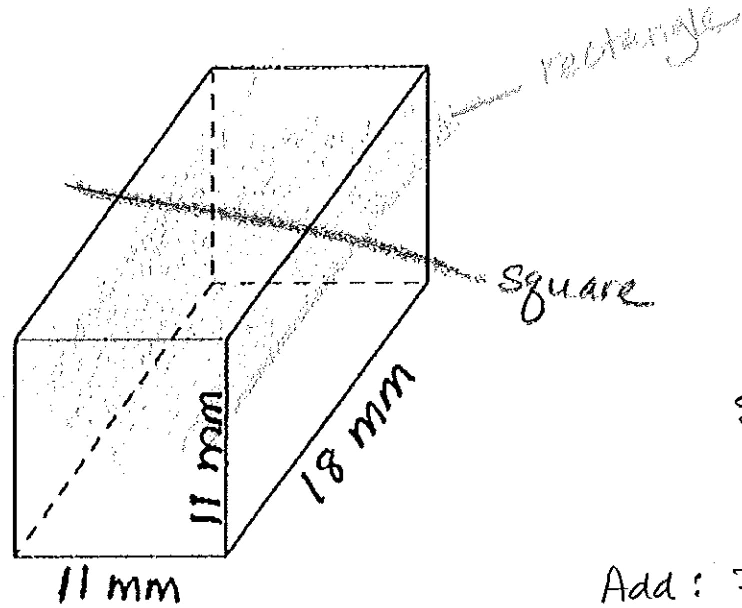
3.



4.



5.



SA = 4 ▭'s
2 ⊞'s

Rect = b × h
(18 × 11) = 198
4 of them
198 × 4 = $\underline{792 \text{ mm}^2}$

Square = b × h
(11 × 11) = 121
2 of them = $\underline{242 \text{ mm}^2}$

Add: 792 + 242 = $\boxed{1034 \text{ mm}^2}$

Volume = l × w × h
(11)(11)(18) = $\boxed{2178 \text{ mm}^3}$

6.