

L17-1 cont... **Complex Compound Composite** Area

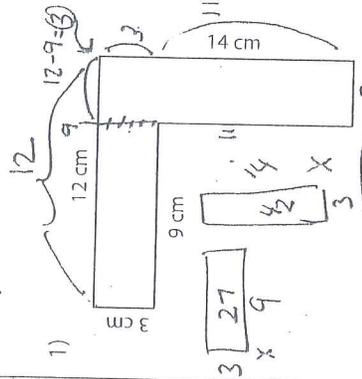
**Decompose**  
 → break apart

**cm = squares - distance**  
 Area and Perimeter of L Shapes

$A = b \cdot h$

$A = bh$   
 Add all lengths

Find the area and perimeter of each shape.

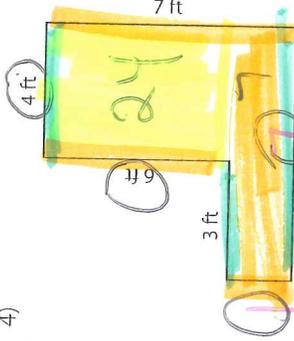


$$\begin{array}{r} 27 \\ + 42 \\ \hline 69 \end{array}$$

Area:  $69 \text{ cm}^2$   
 Perimeter:  $52 \text{ cm}$

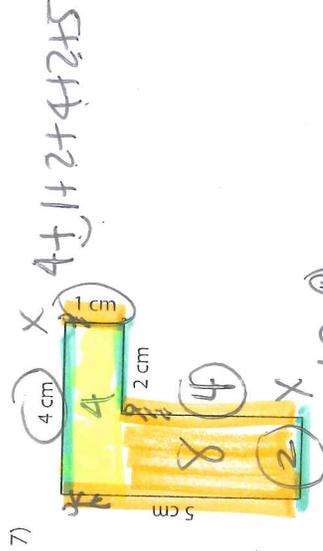
$P = 12 + 14 + 3 + 11 + 9 + 3 =$

4)



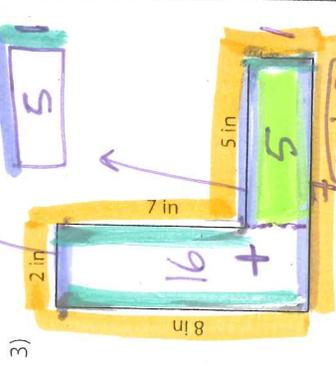
Area:  $31 \text{ ft}^2$   
 Perimeter:  $28 \text{ ft}$

$4 + 7 + 7 + 4 + 3 + 6$



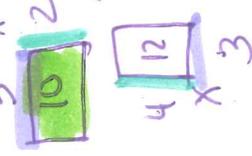
Area:  $12 \text{ cm}^2$   
 Perimeter:  $18 \text{ cm}$

$4 + 1 + 2 + 4 + 2 + 5$



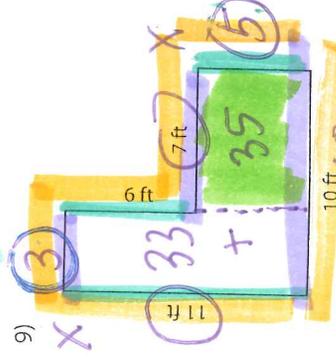
Area:  $21 \text{ in}^2$   
 Perimeter:  $30 \text{ in}$

$2 + 7 + 5 + 1 + 7 + 8$



Area:  $22 \text{ cm}^2$   
 Perimeter:  $17 \text{ cm}$

$5 + 6 + 3 + 4 + 2 + 2 =$



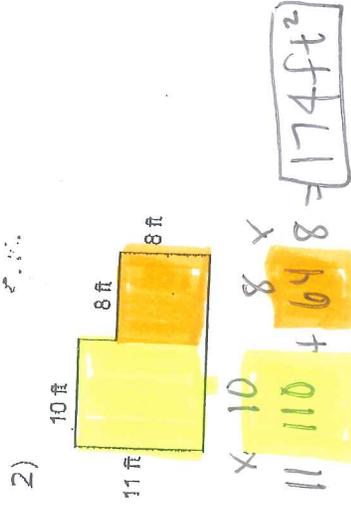
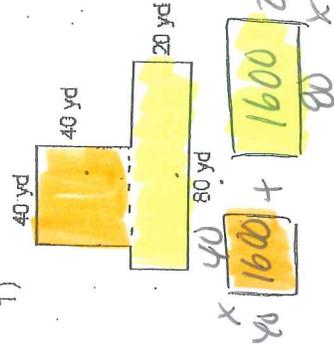
Area:  $68 \text{ ft}^2$   
 Perimeter:  $42 \text{ ft}$

$3 + 6 + 7 + 5 + 10 + 11$

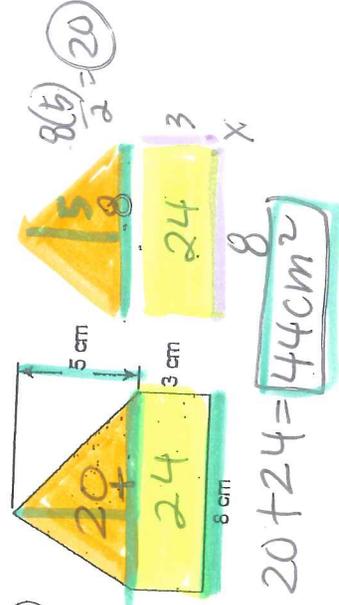
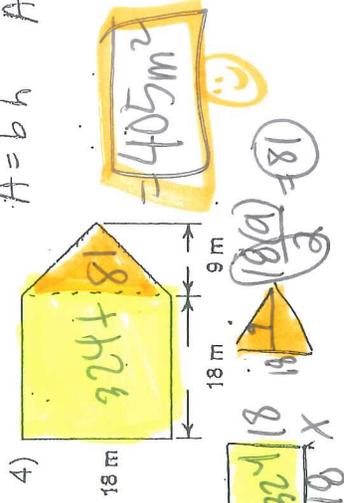
# Area of Compound Shapes (+) (Add)

Find the area of each figure, round your answer to the nearest whole number if necessary.

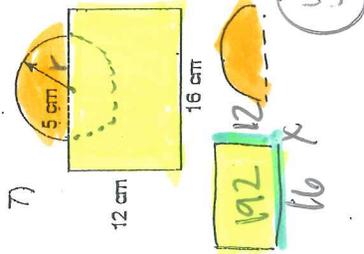
1)  $A = bh$



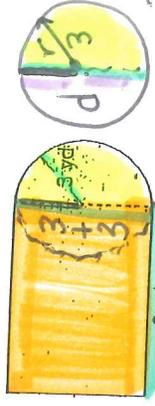
4)  $A = bh$   $A = \frac{bh}{2}$  6)



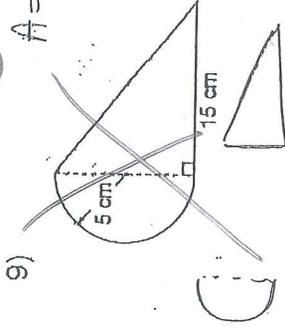
7)  $A = bh$



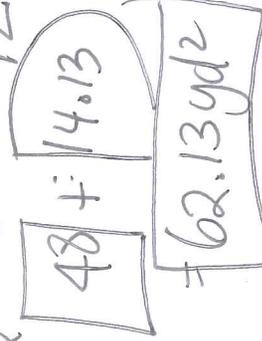
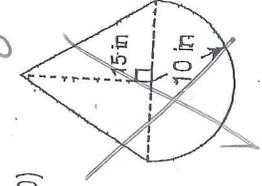
8)  $A = \pi r^2$   
 $3.14 (5)^2 = 78.5$



9)  $A = \frac{bh}{2}$



10)  $A = \frac{bh}{2}$



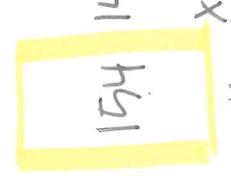
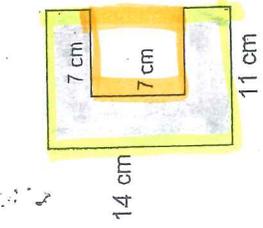
Name: \_\_\_\_\_

Per: \_\_\_\_\_

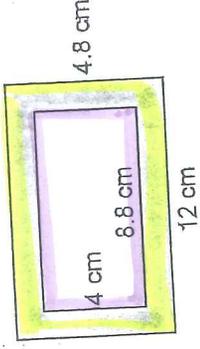
Date: \_\_\_\_\_

# Area of Compound Shapes (-) (Subtract)

Find the area of each figure, round your answer to the nearest whole number if necessary.



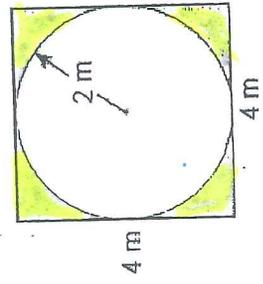
$$154 - 49 = 105 \text{ cm}^2$$



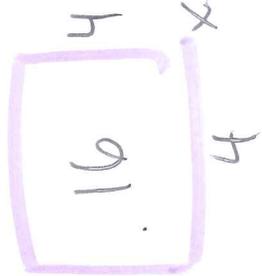
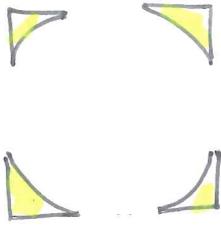
$$4.8 \times 12 = 57.6$$

$$4 \times 4.8 = 19.2$$

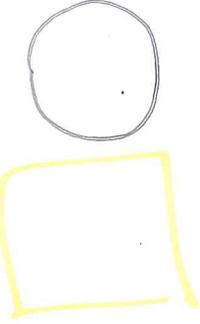
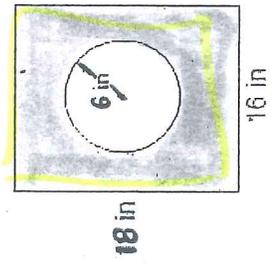
$$57.6 - 19.2 = 38.4 \text{ cm}^2$$



$$\pi r^2 = 3.14(2)^2 = 12.56$$



$$256 - 12.56 = 243.44 \text{ m}^2$$



$$16 - 12.56 = 3.44 \text{ m}^2$$

# L18-1 "Prisms, Pyramids, nets"

Name: \_\_\_\_\_

**PRISMS & PYRAMIDS**

**F-Faces B-bases**

	<b>Triangular prism</b> (5)
	<b>Square prism</b> "cube" (6)
	<b>Rectangular prism</b> (6)
	<b>Pentagonal prism</b> (7)
	<b>Hexagonal prism</b> (8)
	<b>Octagonal prism</b> (10)

	<b>Triangular pyramid</b> (4)
	<b>Square pyramid</b> (5)
	<b>Rectangular pyramid</b> (5)
	<b>Hexagonal pyramid</b> (7)
	<b>Octagonal pyramid</b> (9)

## Prisms

- 3D
- Solid
- 2 Bases
- Faces are

## Pyramids

- 3D
- Solid
- ONE Base
- Faces are

-2D  
-FLAT

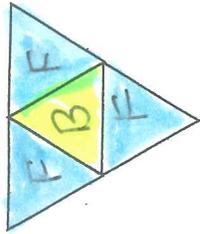
(nets)

Name: \_\_\_\_\_

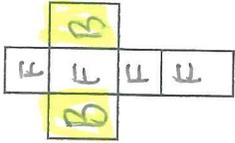
Score: \_\_\_\_\_

Answer Key

Name the solid shape that can be formed by each net.



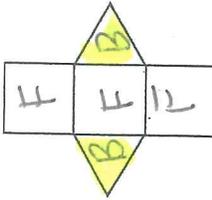
Triangular pyramid



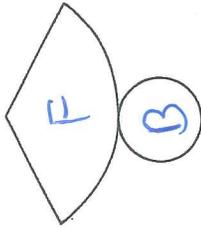
Rectangular prism



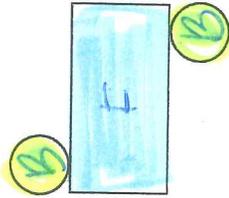
Square pyramid



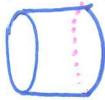
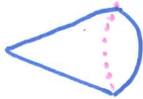
Triangular prism



Cone



Cylinder



# U18-1 "Slicing Solids" Cont...

## SLICING THREE-DIMENSIONAL FIGURES

Select two (2) of the figures below and describe the two-dimensional figure(s) created from cross-section after cuts made that are parallel to the base and perpendicular to the base.

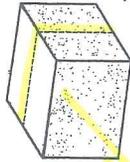
Figure	Parallel Cut	Perpendicular Cut	Comments
	$\parallel = \parallel$		

cut  $\parallel = \parallel$  get Base  
 TL get Face

# Slicing Shapes

Name: \_\_\_\_\_

If you took a slice out of each of the following three-dimensional shapes, what two-dimensional shape would you have? Circle the correct answer.



right rectangular prism



A.



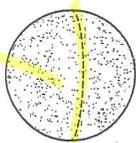
B.



C.



D.



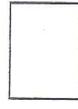
sphere



A.



B.



C.



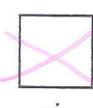
D.



right rectangular prism



A.



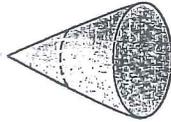
B.



C.



D.



cone



A.



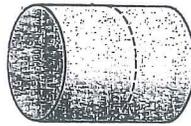
B.



C.



D.



cylinder



A.



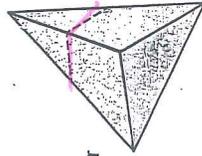
B.



C.



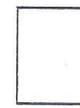
D.



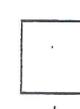
triangular prism



A.



B.



C.



D.

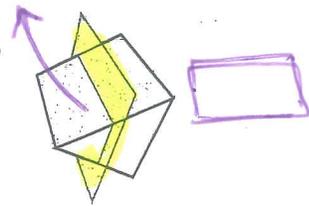


Slicing 3d Shapes

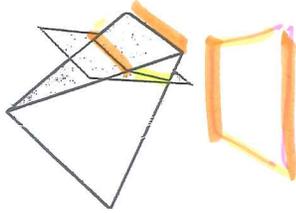
Name: \_\_\_\_\_

Determine the 2d shape that would be created if the 3d shape were sliced as shown.

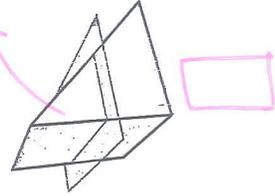
1)



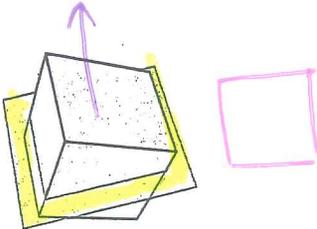
2)



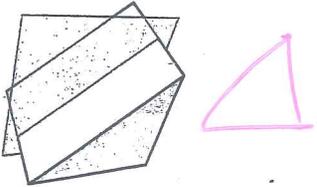
3)



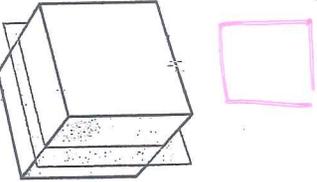
4)



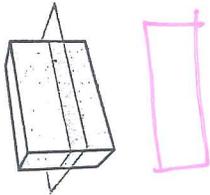
5)



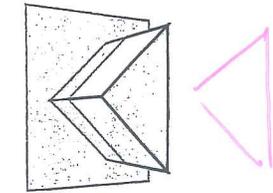
6)



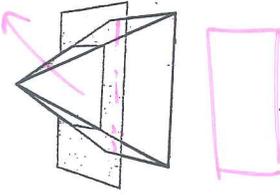
7)



8)



9)

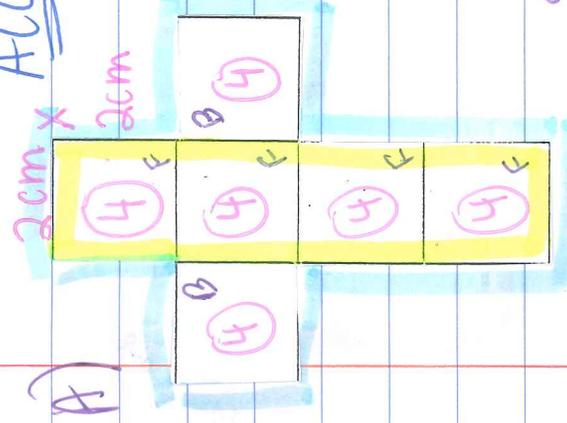


2

"LA" "SA"  
 "LA" lateral / Surface Area  
 "SA" Surface Area

↳ Area of WHOLE solid  
 ↳ Area of ALL Faces

B-Base  
 F-Face



CUBE

$$\frac{F}{4} \mid \frac{B}{2}$$

$$\frac{LA}{4 \text{ -ar:ia}} \mid \frac{SA}{+ 4 > \text{Bases}}$$

$$16 \text{ cm}^2$$

$$16 - LA + 4 > \text{Bases} = 24 \text{ cm}^2$$

- Step 1: Area of Faces  
 2: X # of Faces  
 3: Combine ALL

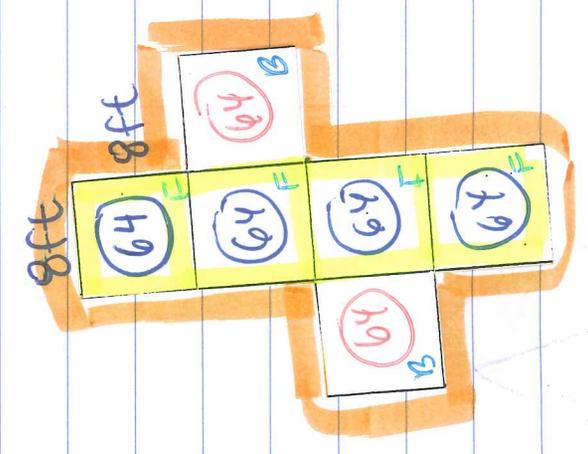
B) cube #2

$$\frac{F}{4} \mid \frac{B}{2}$$

$$\frac{LA}{64} \mid \frac{SA}{264}$$

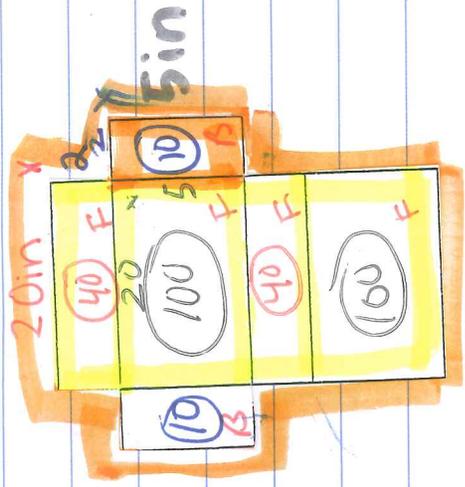
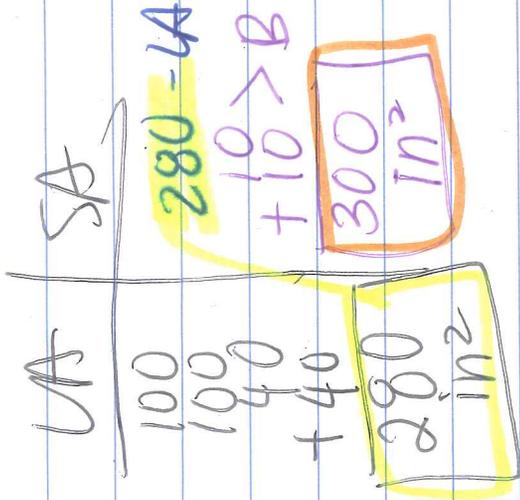
$$256 \text{ ft}^2$$

$$384 \text{ ft}^2$$



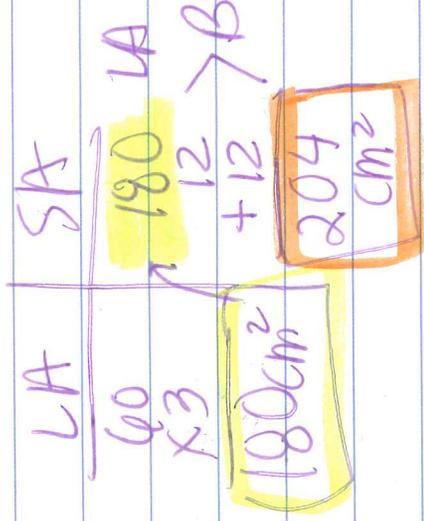
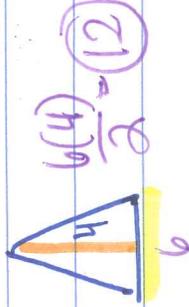
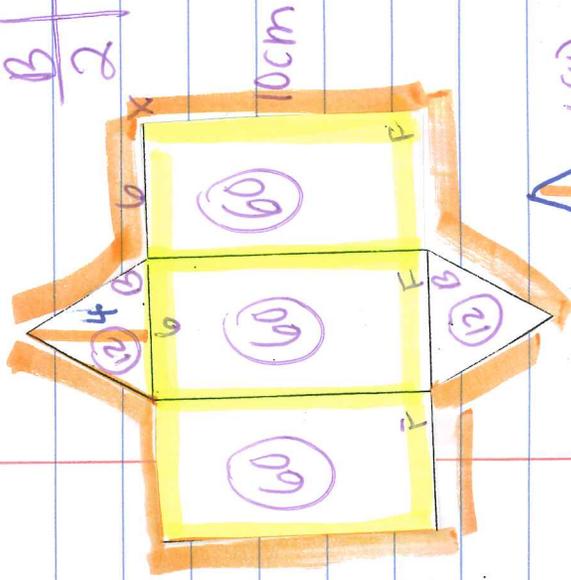
### c) Rectangular Prism

$$\frac{B}{F} \frac{2}{4}$$

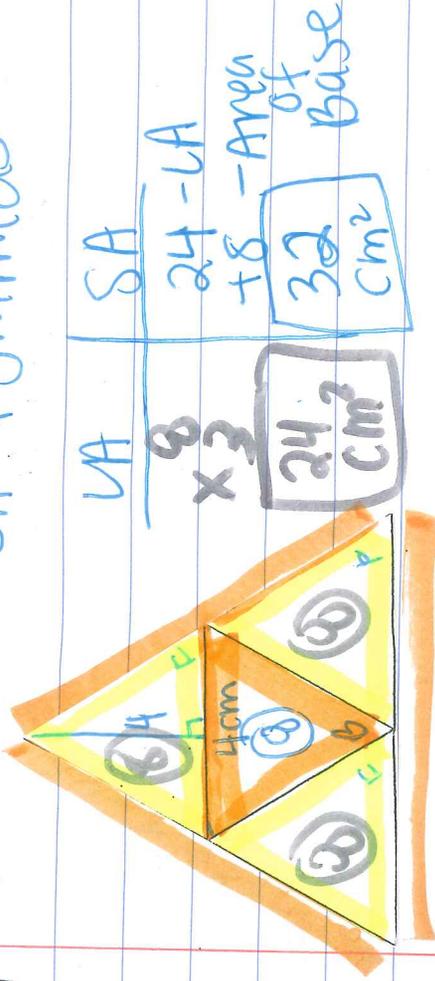


### d) Triangular Prism

$$\frac{B}{F} \frac{2}{3}$$



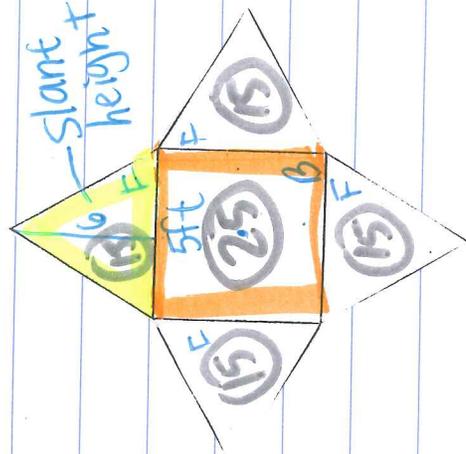
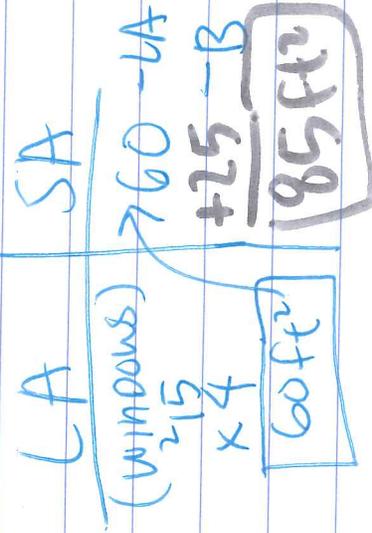
e)  $\Delta$  pyramid SA - Pyramids



LA	SA
8 x 3 24 cm <sup>2</sup>	24 - LA + 8 - Area of Base 32 cm <sup>2</sup>

$A = \frac{1}{2}bh$  or  $\frac{b(h)}{2}$   
 $b=4$     $A = \frac{(4)(4)}{2} = 8$

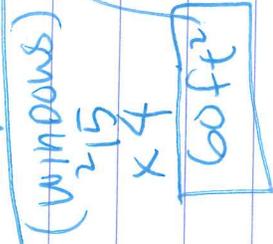
f)  $\square$  pyramid



$A = \frac{bh}{2} = \frac{(5)(6)}{2} = 15$



$760 - LA$   
 $+ 25 - B$   
 $85 ft^2$



LA	SA
(Windows) 215 x 4 60 ft <sup>2</sup>	760 - LA + 25 - B 85 ft <sup>2</sup>

# 118-2 "SA-Prisms"

Step 1: Put all

dimensions

F: Front  
S: Side  
T: Top

3: Add  
4: X 2

F:  $14(11) = 154$   
S:  $11(4) = 44$   
T:  $14(4) = 56$

254

$\times 2$   
**508**

Name: \_\_\_\_\_  
Score: \_\_\_\_\_  
(notes)  
Surface Area - Rectangular Prism

Find the surface area of each rectangular prism.

1) 
$$\begin{array}{r} \text{Front} = (10)(5) = 50 \\ \text{Side} = (9)(5) = 45 \\ \text{Top} = (10)(9) = 90 \\ \hline 185 \\ \times 2 \\ \hline 370 \end{array}$$
 Surface Area = **370 in<sup>2</sup>**

3) Surface Area = \_\_\_\_\_

4) Surface Area = \_\_\_\_\_

6) Surface Area = \_\_\_\_\_

7) 
$$\begin{array}{r} \text{F: } (11)(5) = 55 \\ \text{S: } (7)(5) = 35 \\ \text{T: } (11)(7) = 77 \\ \hline 167 \\ \times 2 \\ \hline 334 \end{array}$$
 Surface Area = **334**

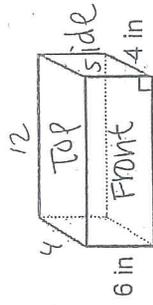
8) Surface Area = \_\_\_\_\_

10) A box in the shape of rectangular prism has a dimension of 30 meters x 27 meters x 28 meters. What is the surface area of the box?

Surface Area = \_\_\_\_\_

# SA - Rect. Prism (HW)

1)



Surface Area:  $\boxed{288}$

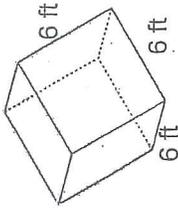
F:  $6(12) = 72$

S:  $4(6) = 24$

T:  $12(4) = 48$

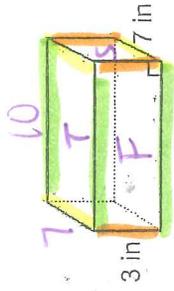
$144 \times 2 = \boxed{288}$

4)



Surface Area: \_\_\_\_\_

2)



Surface Area:  $\boxed{242}$

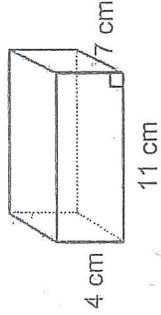
F:  $(3)(10) = 30$

S:  $(7)(3) = 21$

T:  $(10)(7) = 70$

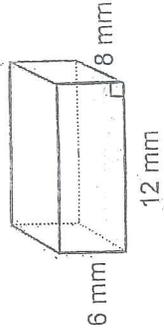
$\frac{121}{2}$   
 $\times 42$   
 $\boxed{242}$

5)



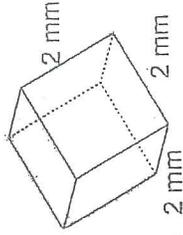
Surface Area: \_\_\_\_\_

3)



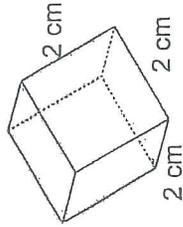
Surface Area: \_\_\_\_\_

6)



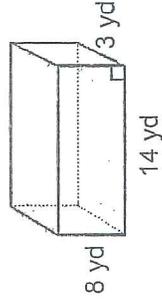
Surface Area: \_\_\_\_\_

7)



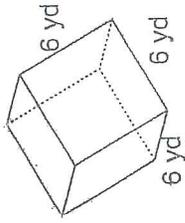
Surface Area: \_\_\_\_\_

8)



Surface Area: \_\_\_\_\_

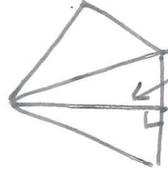
9)



Surface Area: \_\_\_\_\_

# L18-31 Lateral/Surface Area of pyramids p. 205

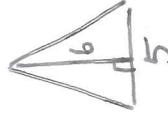
Vocab: Slant height



height of  $\triangle$  face

## A) Lateral Area (L)

Step 1: Find the area of a FACE



2: multiply by # of faces

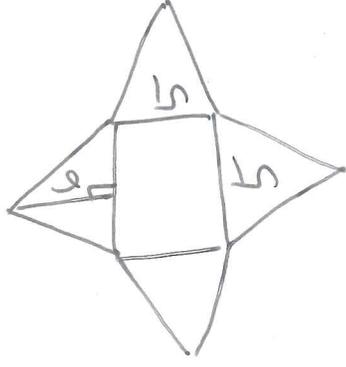
$$A = \frac{1}{2}bh$$

$$\frac{1}{2}(5)(6)$$

$$\downarrow \times 30$$

$$\times 4$$

$$L = \boxed{60}$$



## B) Surface Area (SA)

Step 1: Find lateral Area  $\boxed{60}$

2: Find area of base

3: Find total sum of lateral areas & Base



Base is a square



$$A = 5(5)$$

$$\boxed{25}$$

$$B = 25$$

$$\text{Sum of } L = 60$$

$$\boxed{SA = 85}$$

# [L19-2] Volume of pyramids p.217

## A) Volume of pyramids

height of pyramid

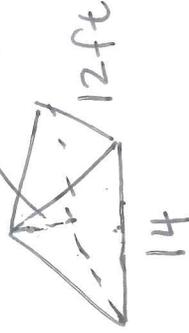
$$V = \frac{1}{3} Bh$$

or  $V = \frac{Bh}{3}$

area of base

height = 5 ft

ex)



$$V = \frac{1}{3} Bh$$

$$\frac{1}{3} (14)(12)(5)$$

$$4(14)(5)$$

$$20(14)$$

$$14 \times 20$$

$$V = 280 \text{ ft}^3$$

ex)

Triangular pyramid

w/ Base area of 12 in<sup>2</sup>

height of 10 in.

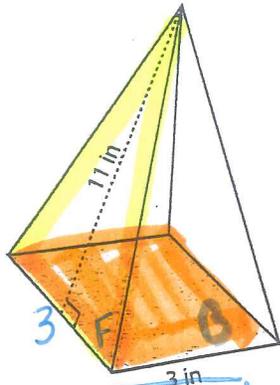
$$V = \frac{1}{3} Bh$$

$$\left(\frac{1}{3}\right) 12 (10)$$

$$4(10) = 40 \text{ in}^3$$

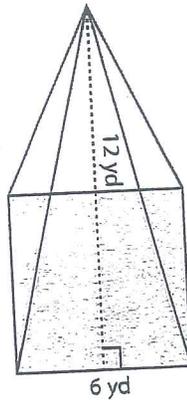
# LA/SA - Square Pyramids

ex1)



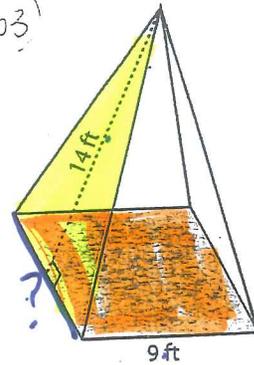
LA =  $66 \text{ in}^2$   
 Surface Area =  $75 \text{ in}^2$

ex2)



LA = \_\_\_\_\_  
 Surface Area = \_\_\_\_\_

ex3)

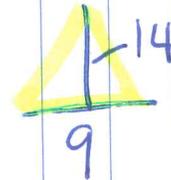


LA = \_\_\_\_\_  
 Surface Area = \_\_\_\_\_

$$A = \frac{3(11)}{2} = \frac{33}{2} = 16.5$$

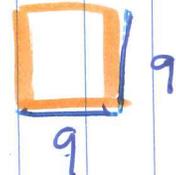
LA	SA
16.5 x 4 <hr/> 66	66 - LA + 9 - B <hr/> 75

$9^2 = 81$   
 $3 \times 3 = 9$



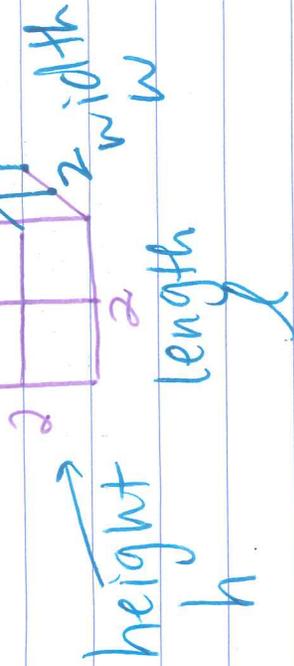
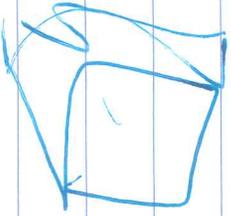
$$A = \frac{14(9)}{2} = 63$$

LA	SA
63 x 4 <hr/> 252	252 + 81 <hr/> 333



$$A = 9(9) = 81$$

# L19-1 "Volume - Prism"



$$= 8 \text{ cm}^3$$

$$2 \times 2 \times 2$$

3#s "8 cubic cm"

$$l=3$$
$$w=2$$
$$h=2$$

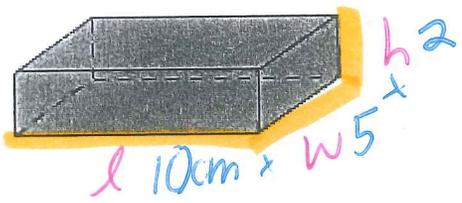
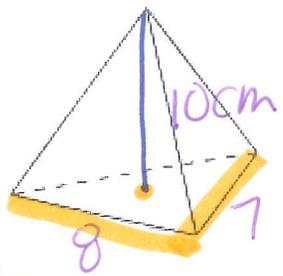
$$\text{ex) } V = lwh$$
$$V = 3(2)(2)$$
$$= 6(2)$$
$$V = 12 \text{ cm}^3$$

# L19-2 Volume

$$V = \frac{lw h}{3}$$

$$\frac{10(8)(7)}{3} = \frac{560}{3}$$

$$V = 186.7$$



$$V = lwh$$

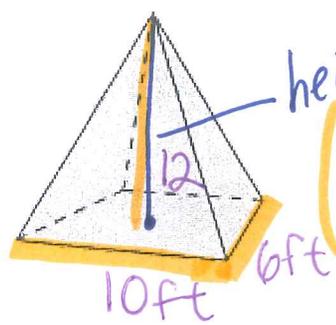
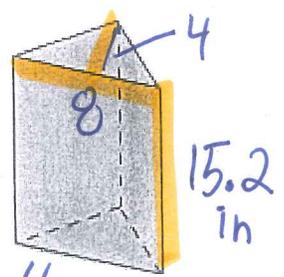
$$V = 10(5)(2)$$

$$V = 100 \text{ cm}^3$$

$$V = \frac{lw h}{2}$$

$$\frac{15.2(8)(4)}{2} = \frac{486.4}{2}$$

$$= 243.2 \text{ in}^3$$



$$V = \frac{lw h}{3}$$

$$V = \frac{10(6)(12)}{3} = \frac{720}{3}$$

$$= 240 \text{ ft}^3$$

## Volume

1) rect. prism  $V = lwh$   
or  
cube

2) tri. prism  $V = \frac{lwh}{2}$

3) ~~pyramid~~ pyramids  $V = \frac{lwh}{3}$

## Volume Activity - Criteria

- ① Use all pieces
- ② Can combine some/all