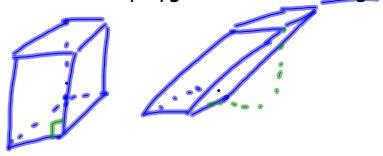


## Math 7H - Unit 5

## Day 14 - Surface Area of Prisms &amp; Pyramids

## Lesson Objectives:

- I can draw geometric shapes with given conditions.
- I can solve real-world and mathematical problems involving area of three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.



The amount of material it would take to cover a geometric solid is called the surface area.

We often use nets to help us find the surface area of a solid.

Find the surface area of the triangle prism.

Area of Triangle

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

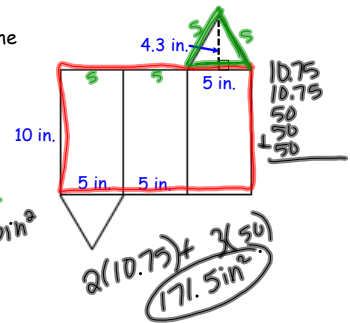
$$A = \frac{1}{2}(5)(4.3)$$

$$= 10.75 \text{ in}^2$$

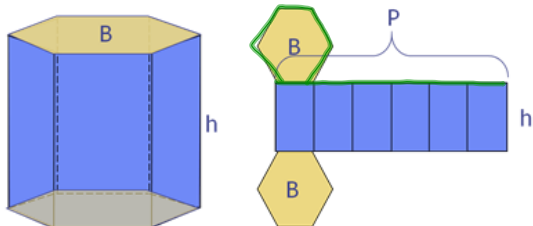
Area of Rectangle

$$A = lw$$

$$A = 5(10) = 50 \text{ in}^2$$



Surface Area of a Prism:  $S = Ph + 2B$



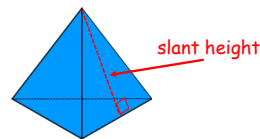
B is the Area of the Polygon Base

P is the perimeter of the polygon

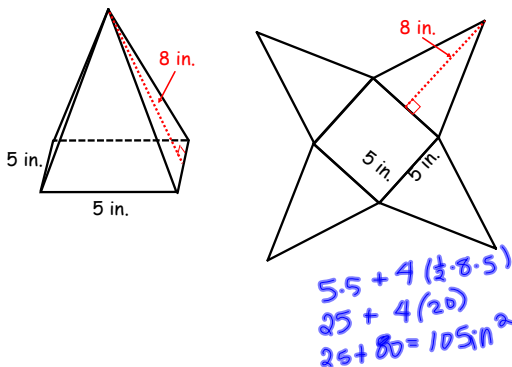
h is the height of the prism

A regular pyramid is a pyramid whose base is a regular polygon.

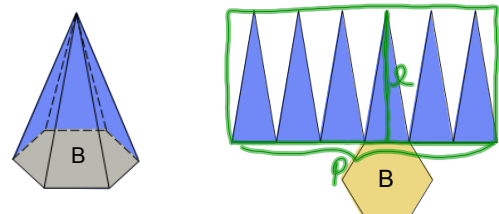
The sides of a pyramid are called lateral faces. They are triangles that intersect at the vertex. The altitude or height of each lateral face is called the slant height ( $l$ ).



Find the surface area of the pyramid.



Surface Area of a Pyramid:  $S = \frac{1}{2}Pl + B$

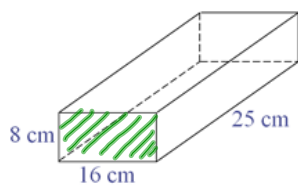


B is the Area of the Polygon Base

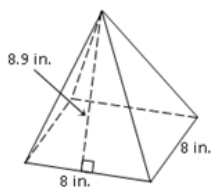
$l$  is the slant height of each face

P is the perimeter of the Polygon

Find the surface area of each solid.



$$\begin{aligned} S &= Ph + 2B \\ &= (48)(25) + 2(128) \\ &= 1200 + 256 \\ S &= 1456 \text{ cm}^2 \end{aligned}$$



$$\begin{aligned} S &= \frac{1}{2}Pl + B \\ &= \frac{1}{2}(32)(8.9) + 64 \\ &= 142.4 + 64 \\ S &= 206.4 \text{ in}^2 \end{aligned}$$

## Homework

6.2 pg 260 #6-19, 21

6.4 pg 274 #4-14, 16-17

\* Individual Think Time \*



What to do if you get stuck...

1. Reread the problem. Did you write it down correctly?
2. Reread your notes. Is there a problem similar that we did together in class?
3. Find a problem similar in your book. Try this one to see if it helps.
4. Skip the problem until the end of Individual Think Time. Then ask an "educated" question of a neighbor or Mrs. Call.

Today we're working by...

