Name_____ Per _____

Mrs. Doolan /Math6

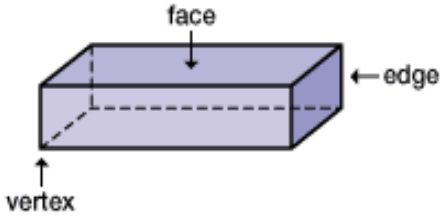
Unit 9 Exploring Surface Area (SA) (11-2)

Objective: to find the surface area of a polyhedron by using a net of the solid.

Face: the flat surfaces of a solid.

Edge: the line where two faces come together.

Vertex: the line where several edges come together.



Polyhedron: a solid whose faces are polygons.

Prism: a polyhedron with two parallel and congruent faces.

Surface Area (SA): the sum of all face areas.

Net: a 2 dimensional pattern of a 3 dimensional solid.

Remember:

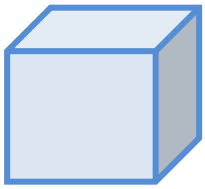
Cube: a 3 dimensional figure with 6 identical square faces.

Rectangular Prism: a 3 dimensional figure whose opposite sides are equal and quadrilaterals.

To determine Surface Area (SA):

1. Unfold the shape into its net.
2. Count and label the number of faces and state the shape of each figure.
3. Using the correct formula, compute the area of each face
4. Add all areas together and label as *squared units*.

Let's solve for SA of this cube:



5 ft

Step #1: Create the net:

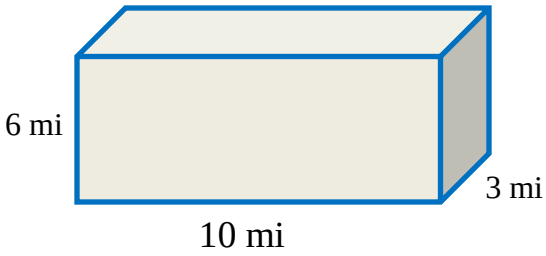
Step 2: Count and label the number of faces (6) and shape of each face (square).

Step #3: Use your formula to compute the area of each shape:

A = s x s	A = s x s	A = s x s	A = s x s	A = s x s	A = s x s
A = 5 x 5	A = 5 x 5	A = 5 x 5	A = 5 x 5	A = 5 x 5	A = 5 x 5
A = 25 ft^2	A = 25 ft^2	A = 25 ft^2	A = 25 ft^2	A = 25 ft^2	A = 25 ft^2

Step #4: Add them all together: 25 + 25 + 25 + 25 + 25 + 25 = 150 ft^2

Example #2: Now let's solve for SA of a rectangular prism:



1. Create the net:

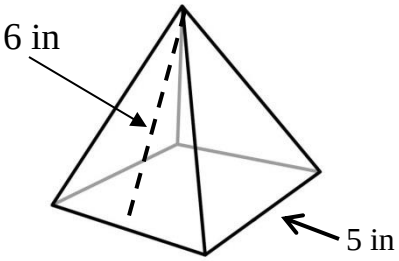
Step 2: Count the number of faces and label the shape of each face.

Step #3: Use your formula to compute the area of each shape:

Step #4: Add them all together:

Example #3: And let's solve for SA of a a pyramid:

1 & 2.Create the net & count/label each face:



3. Use the correct formulas and compute each area:

Area of a square: A = s x s

Area of a triangle: A = ½ (bh)

Area #1:	A#2:	A#3:	A#4:	A#5
A = s x s	A = ½ (bh)	A = ½ (bh)	A = ½ (bh)	A = ½ (bh)
A = 5 x 5	A = ½(5 x 6)	A = ½(5 x 6)	A = ½(5 x 6)	A = ½(5 x 6)
A = 25 in²	A = 15 in²	A = 15 in²	A = 15 in²	A = 15 in²

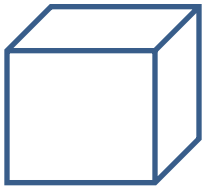
4. Add all areas together and label as squared units:

A = 25 in² + 15 in² + 15 in² + 15 in² + 15 in²

A = 85 in²

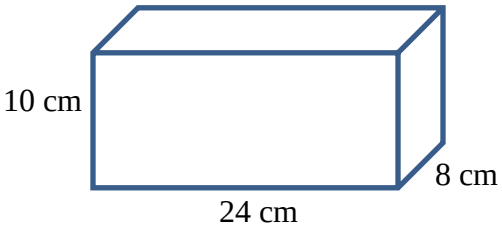
YOU GOT THIS:

1. Solve for SA of this cube:

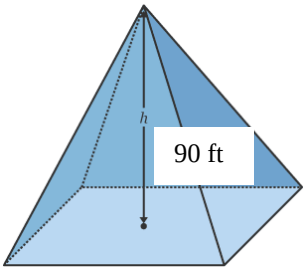


8 in

2. Solve for SA of this rectangular prism:



3. 2. Solve for SA of this square based pyramid:



65 ft