enVision Math Grade 5- Adapted Notes **Name- _____**

Topic 12 Lesson 1- Solids

Objective: Identify three dimensional shapes according to faces, edges, and vertices.

Vocabulary:

Define: 3- dimensional shape- a solid that takes up _____ ex.) _____

Define: faces- each _____ polygon shaped surface of a 3 dimensional shape

Define: edges- a place where faces _____ along segments.

Define: vertex (___) or vertices (_____ _____ ____)- place where the edges _____ at points.

Define: cube- a 3-dimensional figure made up of all _____

Draw& Label :

Define: prism- a solid with _____ parallel bases that are the same _____ and _____ and faces that are _____

Draw:

Define: cylinder- a solid with _____ circular bases that are _____ and the same _____ and _____.

Draw:

Define: cone- A solid with _____ circular base. The points on this circle are joined at _____ point outside of the base.

Draw:

Define: pyramid- A solid with _____ base that is a _____ and whose other faces are _____ with a common _____

Draw:

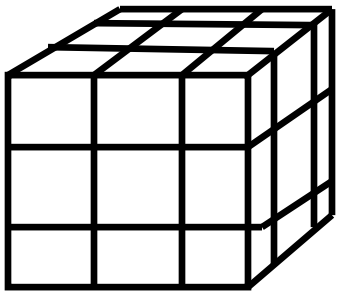
enVision Math Grade 5- Adapted Notes **Name- _____**

Topic 12 Lesson 3- Problem Solving: Use Objects and Solve a Simpler Problem

<u>Objective</u>: Use objects to act and break apart problems into simpler ones in order to reach a solution.

<u>Example</u>:

1. **Shown below are 27 cubes that are glued together to form a larger cube. Then, all 6 faces of the larger cube were painted. How many of the 27 cubes have paint on 1 face? 2 faces?**



Step 1

Find out how many cubes have 1 face painted.

Step 2

How many cubes have paint on 2 faces?

enVision Math Grade 5- Adapted Notes **Name- _____**

Topic 12 Lesson 4- Models and Volume

Objective: Determine the volume of rectangular solids

Vocabulary:

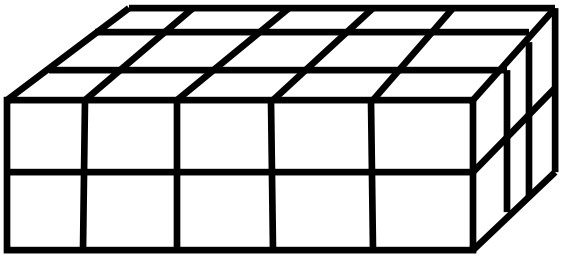
Define: volume- number of cubic units needed to fill a solid figure; amount of _____ an object takes up

**** All of the labels are in _____ units****

Define: cubic units- the volume of a cube _____ unit on each edge

Example:

1. **What is the volume of this solid?**



Option 1

Step 1

Look to find how many units are on the bottom layer

Step 2

Since there are _____ layers,

multiply the volume by _____

Option 2

V= _____

V= _____

V= _____

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Topic 12 Lesson 5- Volume

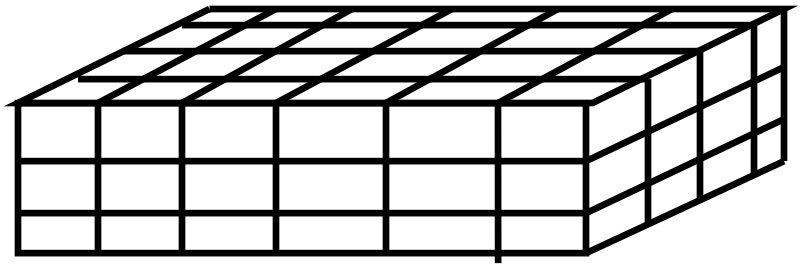
<u>Objective</u>: Count cubic units and use formulas to find the volume of rectangular prisms.

Formula for Volume- _____

**** Remember the label for volume will always be in _____ units****

<u>Examples</u>:

1. **Find the volume of this figure:**

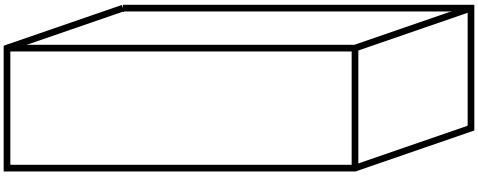


V= _____

V=_____

V=_____

2. *** Base area= _____**
   Volume= _____



V= _____
V= _____
V= _____

enVision Math Grade 5- Adapted Notes **Name- _____**

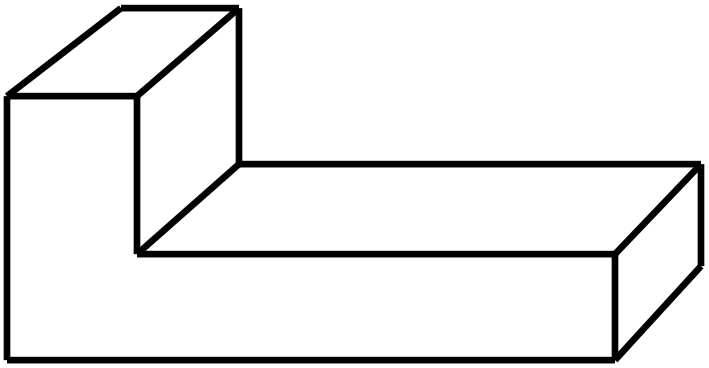
Topic 12 Lesson 6- Combining Volumes

<u>Objective</u>: Find volumes of irregular solids

**** When doing these types of problems, we will need to split the shape into _____ or _____ boxes and then find the volume of each shape. After we find the volume of each shape, we will have to add them together to find the total volume of the object.**

<u>Example</u>:

1. **A storage building has the shape and size shown below. The warehouse supervisor, Greg, wants to find the volume of the building to determine how much storage space is available. What is the volume of the building?**



Step 1 **Step 2** **Step 3**

Split the object **Find volume of each prism** **Add the volumes**

V= _____

V= _____

V= _____

Rectangular Prism A **Rectangular Prism B**

V= _____ **V= _____**

V= _____ **V= _____**

V= _____ **V= _____**

enVision Math Grade 5- Adapted Notes **Name- _____**

Topic 12 Lesson 7- Problem Solving: Use Objects and Reasoning

<u>Objective</u>: Use objects and reasoning to find the volume of solid figures.

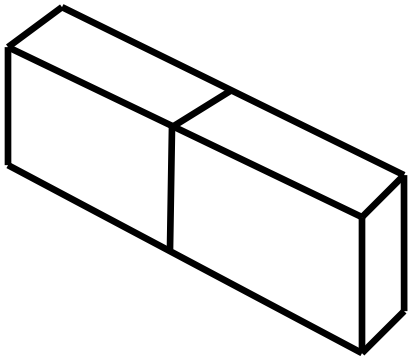
**** We can use cubes to represent a solid to find the volume.**

<u>Example</u>:

1. **Figure A has a volume of 2 cubic cm (cm^3). Find the volume of B. Then use the cubes to make a solid figure with a volume of 4 cm^3.**

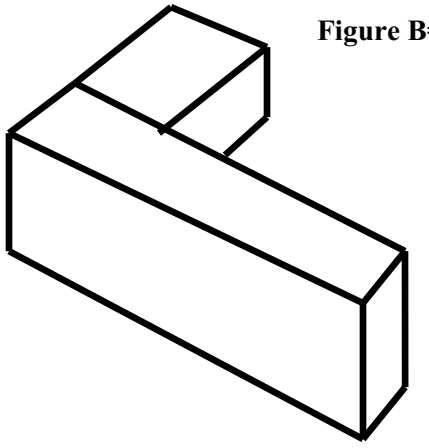
Step 1

Figure A



Step 2

Figure B



Volume of Figure B= ___

Step 3

Create a solid figure with only 4 cm cubes