Assignment 2

Inventor
# Editing a Solid Model

Objectives

When you complete this assignment you will:

1. edit a file to create a new solid model.
2. cut surfaces of the model using the cut feature of the extrusion command.
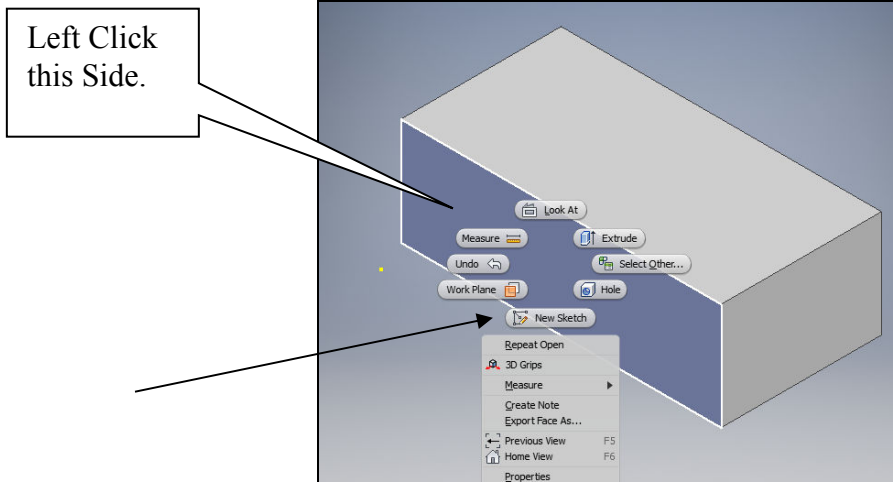3. view and rotate three-dimensional models.

Getting Started

In the Orthographic and Isometric Module, you drew the same problems that will be used with the Inventor Module. The problems evolve from very simple to complex. You will have less difficulty understanding the processes of Inventor using these drawings.
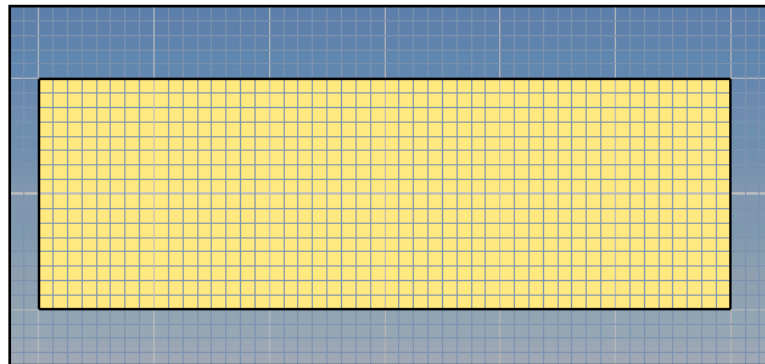
1. **Launch Autodesk Inventor Professional 2016**. The Getting Started window will come up. Open the file that you created in Activity 1 the file IN-1. When the file opens you will edit the model.

2. **Left-click** the **front view** of the model. You will notice the surface change colors. Left-click the top and the right side of the model. You will notice that they change colors as well. **Again left-click the front view**.
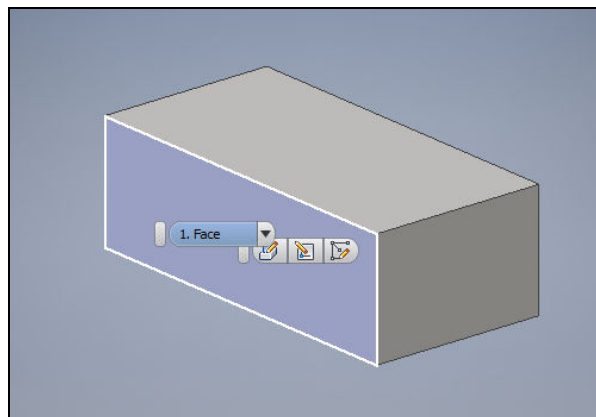
3. **Right click** and select **new sketch**. If the view did not rotate to a two dimensional view, select the **Look At** icon on the Standard Toolbar. Again left click the front view and the view should rotate to a two-dimensional view of the front view.

Left Click this Side.

Look At

Measure

Extrude

Undo

Select Other...

Work Plane

Hole

New Sketch

Repeat Open

3D Grips

Measure

Create Note

Export Face As...

Previous View   F5

Home View   F6

Properties

4. The rotated two-dimensional view should have graph lines for editing.

5. You will find **sample drawings** in the back of this manual on goldenrod paper. These will be used in many of the assignments. Study the first problem on sample sheet 1 (End Lap Member IN-1). You are going to cut a section away from the block to create that model. Draw the lines on the front side of the model as illustrated below. Do not worry about exact position since you will use the dimension tool to locate the exact position for the lines.

Vertical line
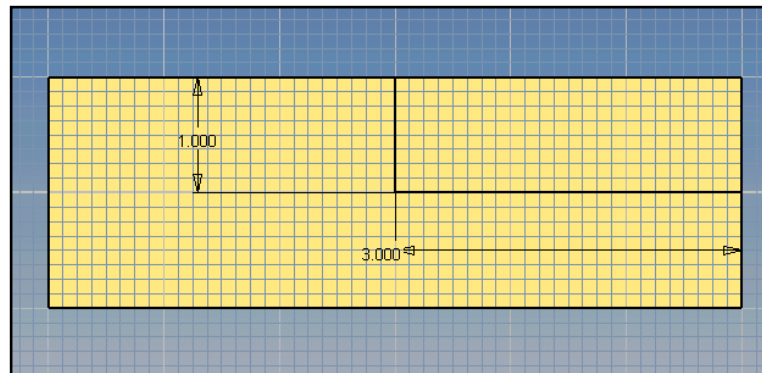
Horizontal line

Inventor
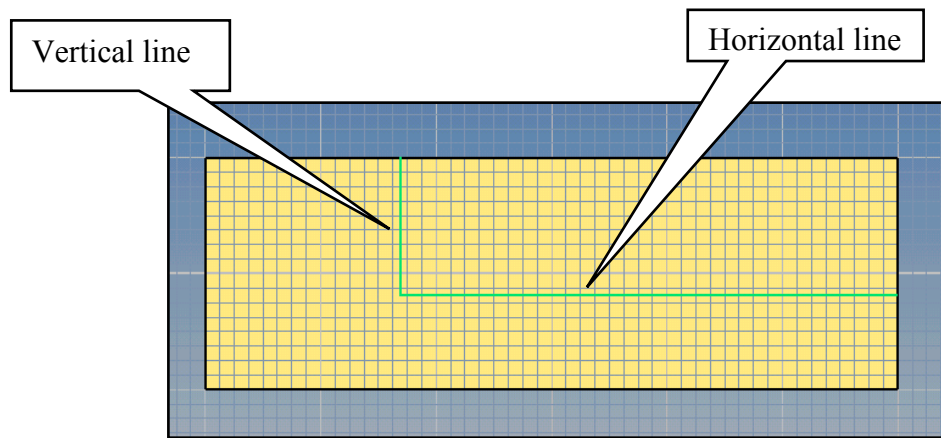
6. You will now use the **dimension tool** to dimension the two new lines.
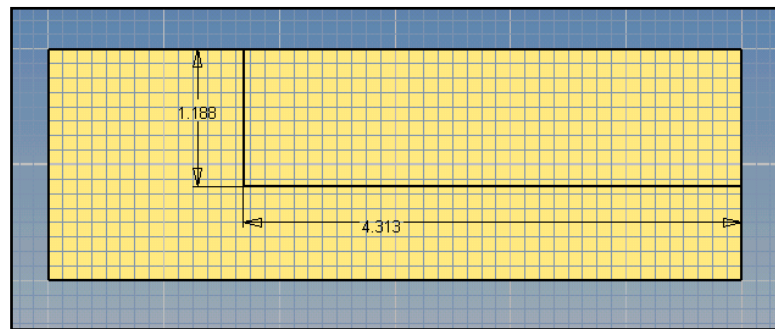
7. Edit the **vertical dimension** to 1" and the **horizontal dimension** to 3". Remember you have to left-click the dimension and change the distance to the desired length.

8. Right-click and select done. Right-click a second time and choose Finish Sketch from the pop up. Finally, right click again and select Isometric view. **(You should always Finish a sketch before you do any extrusions.)**
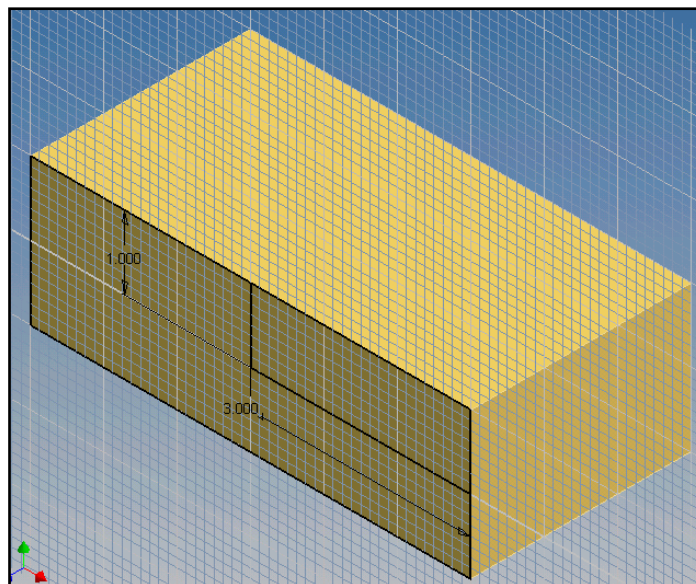
9. Select the Extrusion tool from the Features toolbar. Left-click the area to be cut. Select the Cut icon and change the distance from 1 to 3. Be sure the cut direction is correct as illustrated:
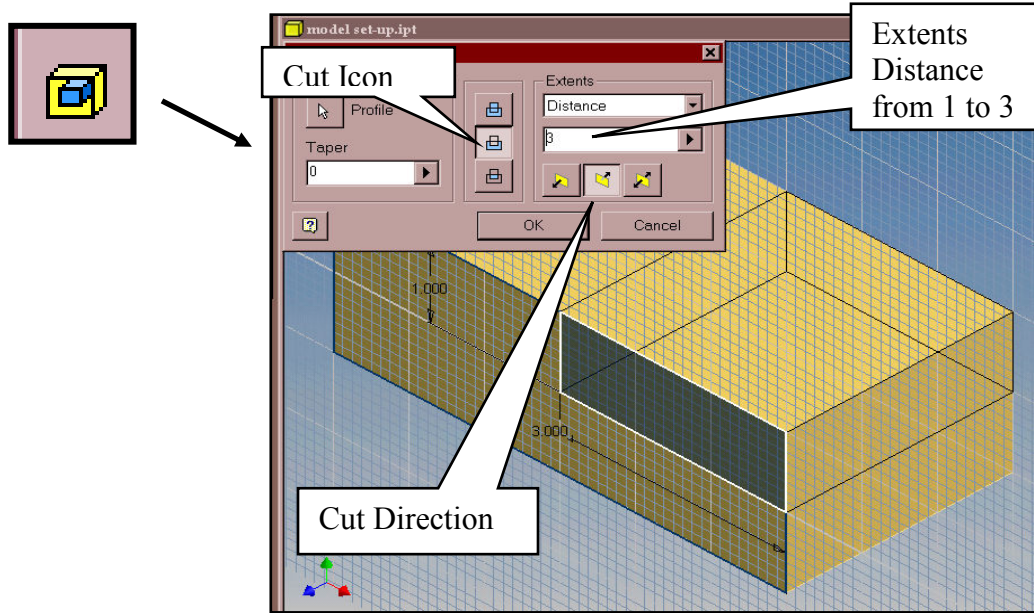
10. When you click the OK button, the model should be extruded as illustrated:
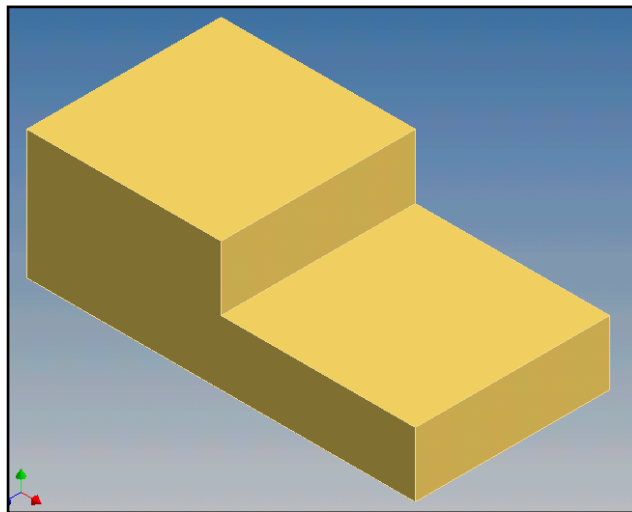
11. You have successfully drawn problem 1 the End Lap Member - IN-1. **Save the file in your server folder as IN-1.**

Viewing and Physical Appearance of the Model

1. Before exiting the first problem, you will need to become familiar with Full Navigational Hand wheel.

Click the Full Navigational Hand Wheel

Select Orbit and Spin the wheel
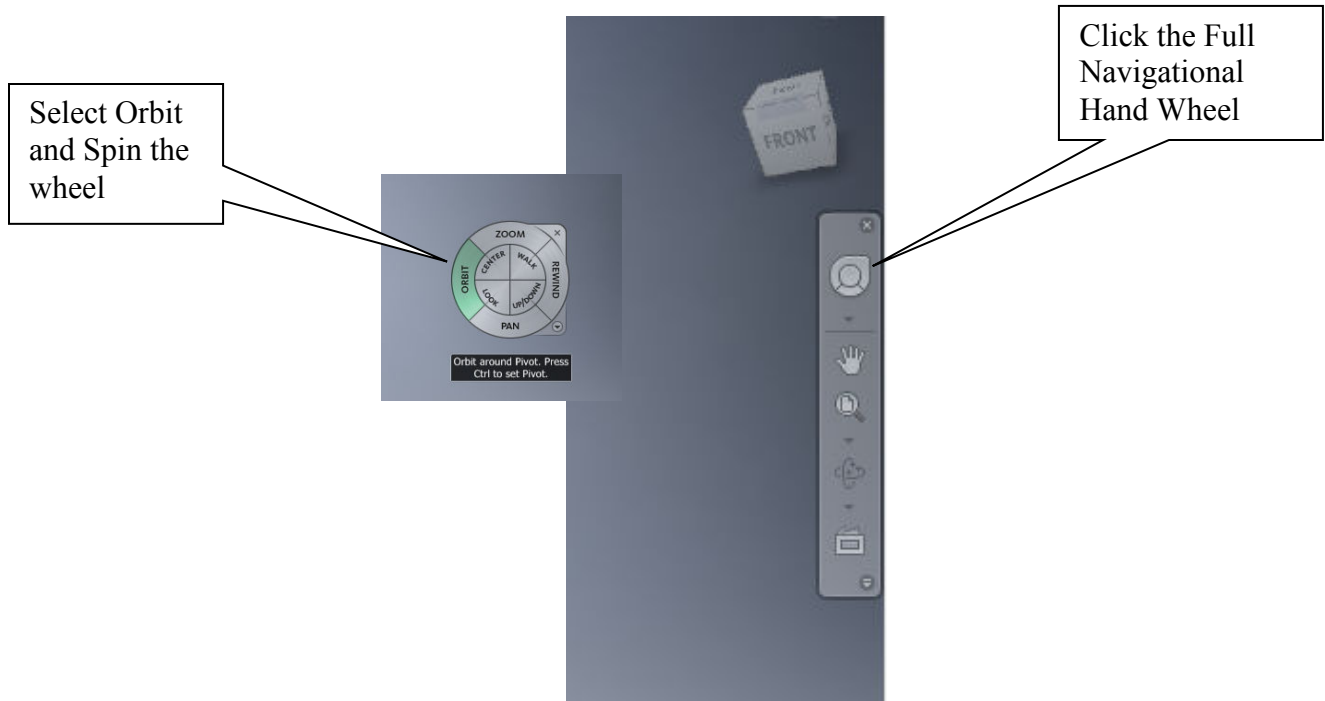
2. The following is a list of controls:
   a. Orbit – Allows you to rotate the object and view all sides.
   b. Pan – Allows you to move the object up or down, side to side
   c. Rewind – Allows you to choose a previous view.
   d. Zoom – Allows you to zoom in or out.

3. Experiment with the zoom tools and the pan feature on the standard toolbar.

Preparations for the Rabbeted Block IN-2

This problem will be a continuation of the skills learned in Assignment 1 and the first part of Assignment 2. You will create the block that is 2" x 6" x 3" the exact same way that you did in Assignment 1. When the solid model block is finished, you extrude the right side view of this problem.

1. Draw the problem the same as Assignment 1.
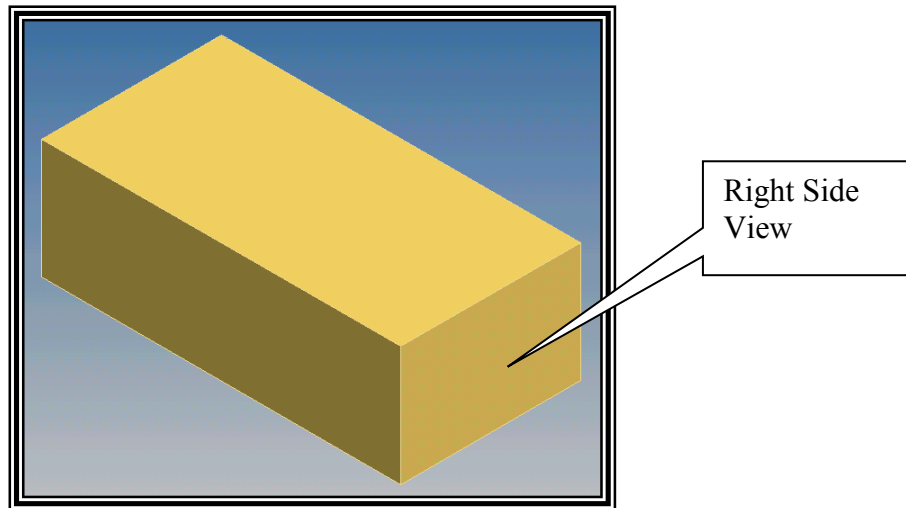
Right Side View

2. Right click on the right side view and select new sketch. Draw in the lines below.
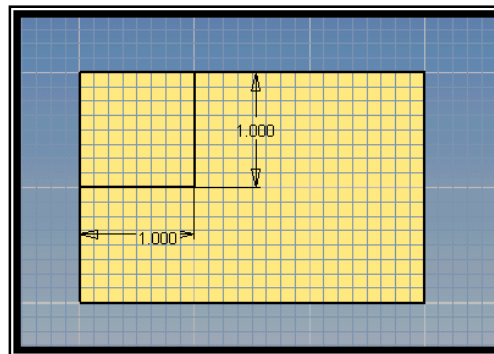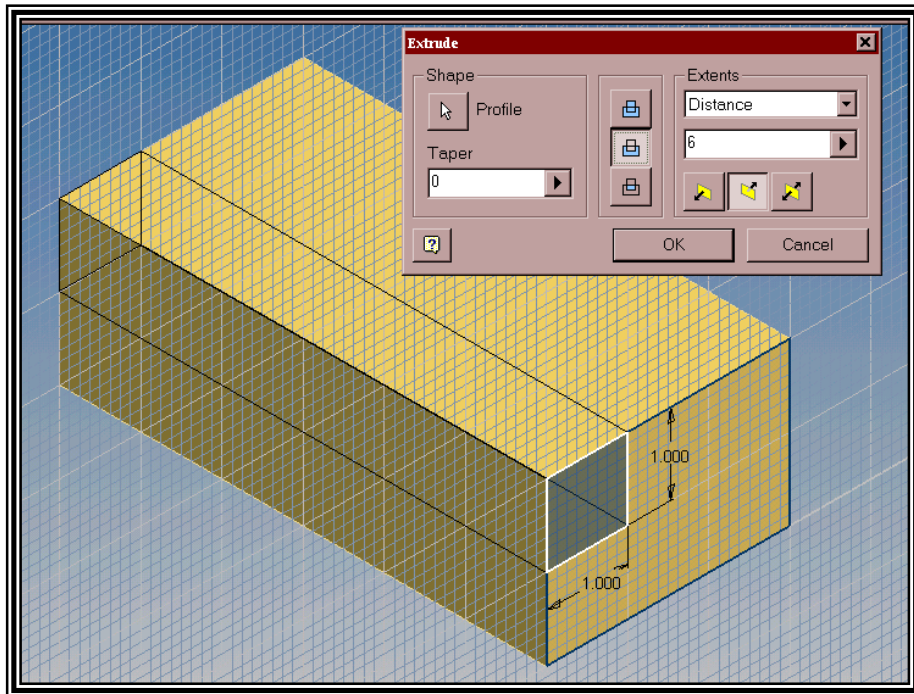

Right Side View

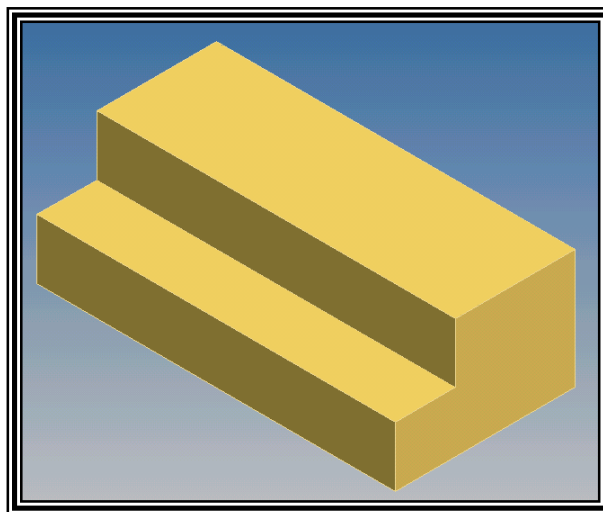3. **Finish the sketch** and rotate to an **Isometric view**.

4. **Extrude** the model with the selected settings as illustrated:

Settings should appear as illustrated before selecting OK

5. When you click OK the model should be extruded as illustrated:

6. Save the file as IN-2. Each problem will continue to add to your problem solving skills.

What Do You Know?

Load Assignment 2 of module 81.40 and answer the following questions:

1. What is the first step for adding a new sketch to an existing model?

   a. Open a new drawing
   b. Extrude All
   c. Right click & select new sketch
   d. Right click and select isometric

2. Which icon will give you a better view of a specific work surface?

   a. Look at
   b. Zoom All
   c. Isometric
   d. Rotate

3. What icon was used in the extrude command to remove surfaces from the model?

   a. Trim
   b. Cut
   c. Expand
   d. Remove

4. Which view had to be extruded on the Rabbeted Block IN-2 problem?

   a. Front
   b. Left Side
   c. Top
   d. Right Side

5. Which of the following icons represent the rotate tool?

   a.
   b.

   c.
   d.