Autodesk Inventor® 2016

A Tutorial Introduction

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C H A P T E R   3

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# Learning To Detail Part Drawings

Objectives:

1. Create a simple sketch using the Sketch Panel
2. Extrude a sketch into a solid using the Model/Part Features Panel
3. Create an Orthographic view using the Place Views/Drawing Views Panel Extrude a sketch in the Model/Part Features
4. Edit the appearance of a Solid Model using the Edit Views command
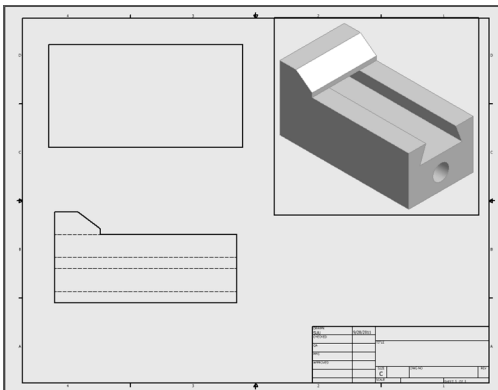
Chapter 3 includes instruction on how to design the parts shown.

1. Start Autodesk Inventor 2016 by referring to "Chapter 1 Getting Started."

2. After Autodesk Inventor 2016 is running, begin a new sketch.
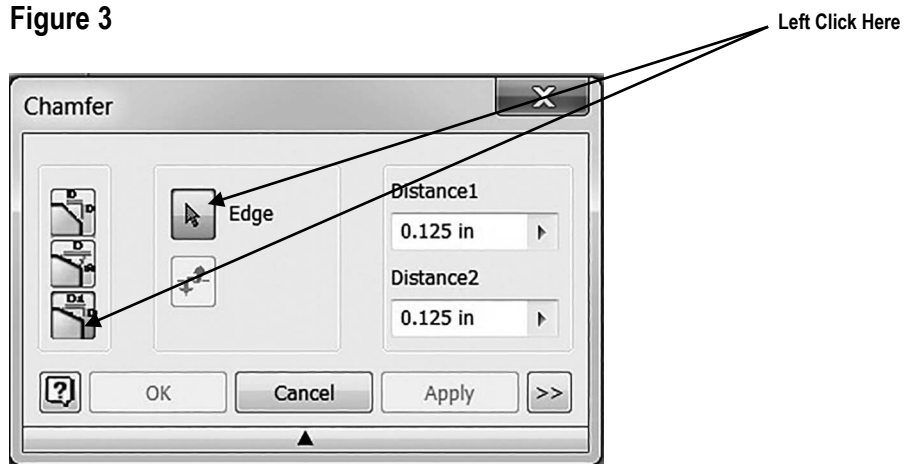
3. Complete the drawing shown in Figure 1.

Figure 1
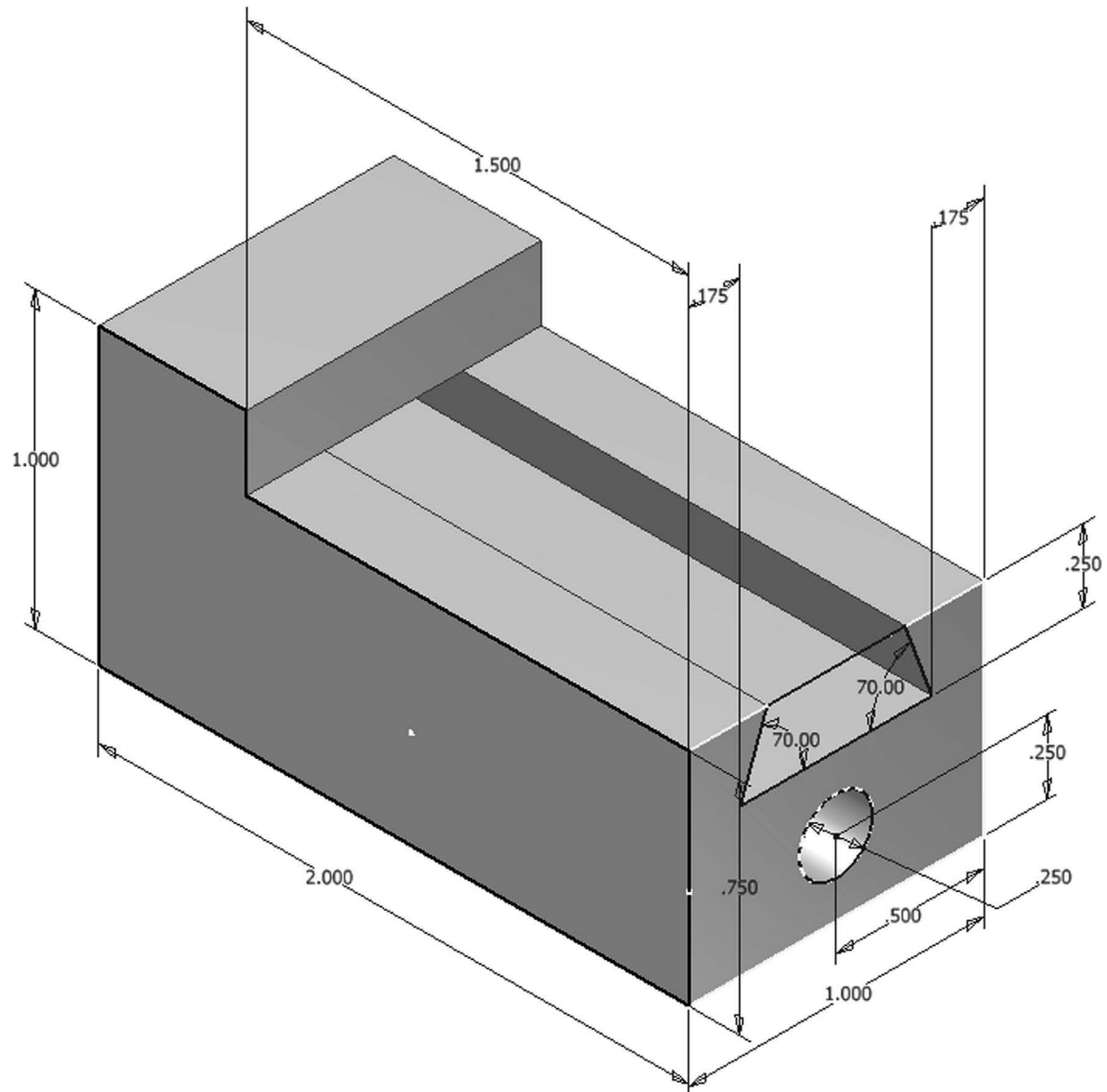
4. Move the cursor to the upper middle portion of the screen and left click on the **Chamfer** icon as shown in Figure 2.
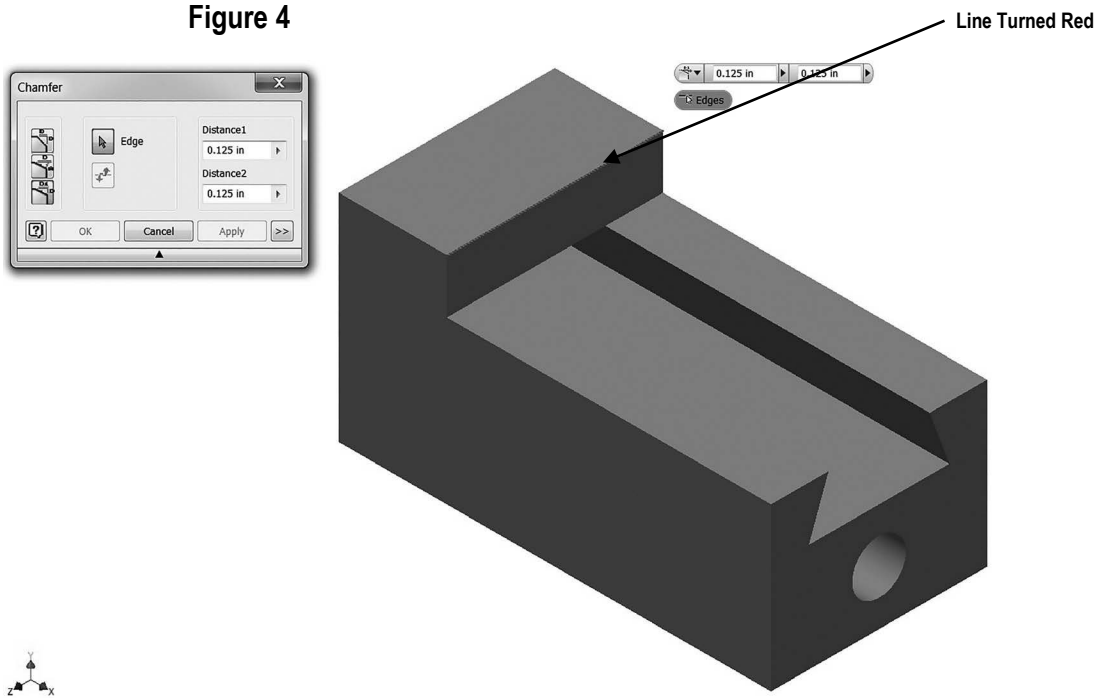
Figure 2
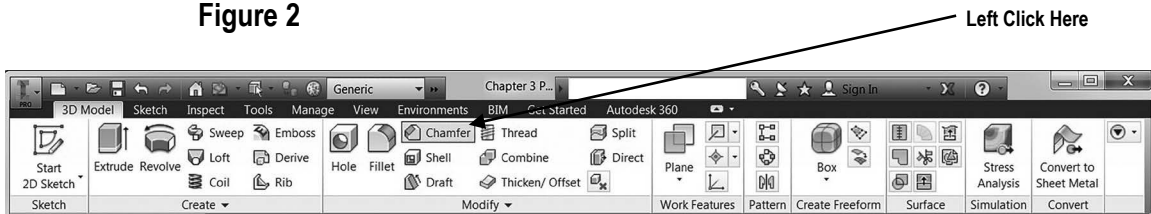
Left Click Here

5. After selecting **Chamfer,** the Chamfer dialog box will appear. Left click on the **Edge** icon. Left click on the "Two Distance Chamfer" icon as shown in Figure 3.
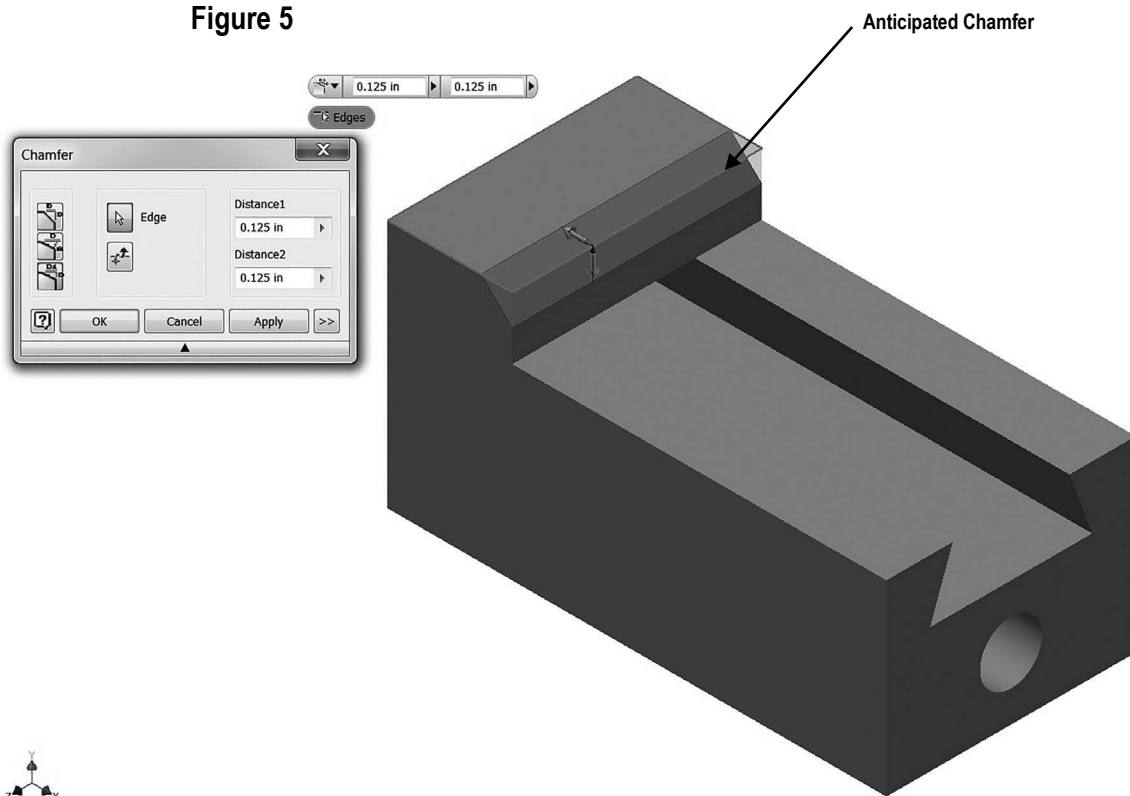
Figure 3

Left Click Here

6. Move the cursor to the front upper corner. A red line will appear as shown in Figure 4.
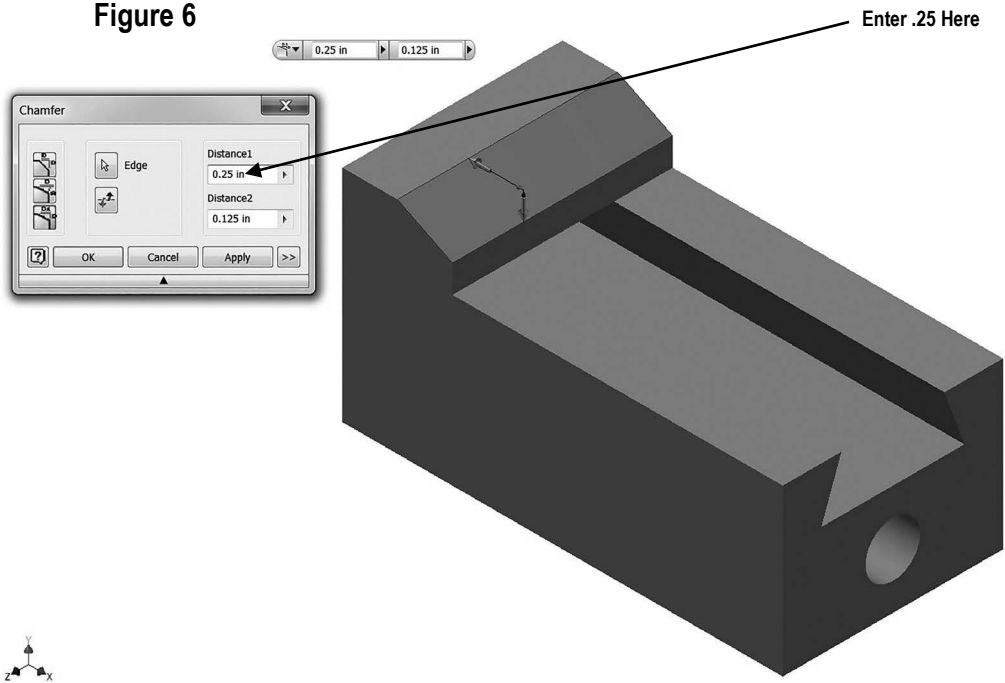
Figure 4

7. Inventor will provide a preview of the anticipated chamfer as shown in Figure 5.

Figure 5

8. Move the cursor to Distance 1 in the dialog box and highlight the text. Enter **.25** in the dialog box. Inventor will provide a preview of the chamfer as shown in Figure 6.
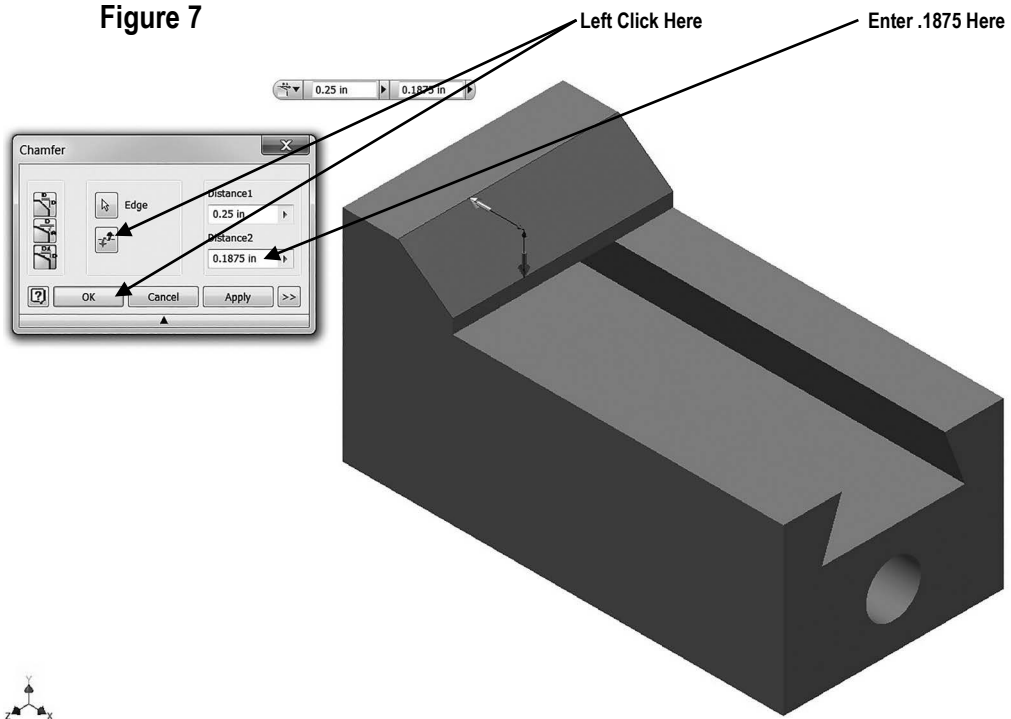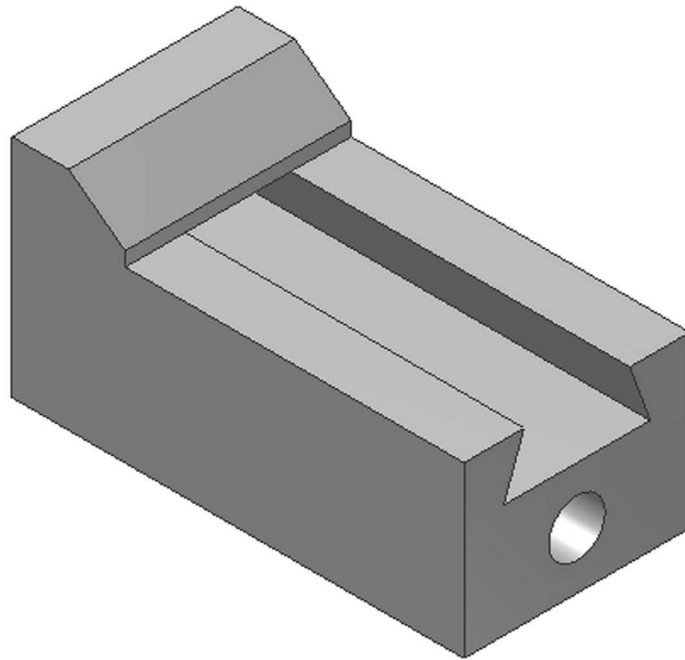
Figure 6

Enter .25 Here

9. Move the cursor to Distance 2 in the dialog box and highlight the text. Enter **.1875** in the dialog box. Inventor will provide a preview of the chamfer. To flip the direction of the chamfer simply left click on the Flip icon as shown in Figure 7.
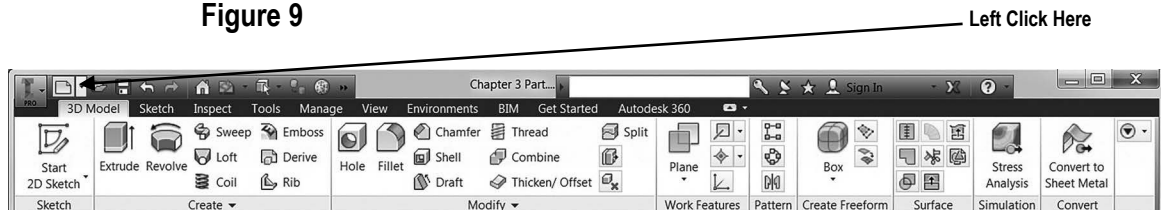
Figure 7

Left Click Here

Enter .1875 Here

10.   Left click on **OK**. Your screen should look similar to Figure 8.

Figure 8

11   Save the part file for easy retrieval to be used in the following section. Do not close the part file.

12.   After the part file has been saved, move the cursor to the upper left portion of the screen and left click on the "New" icon as shown in Figure 9.
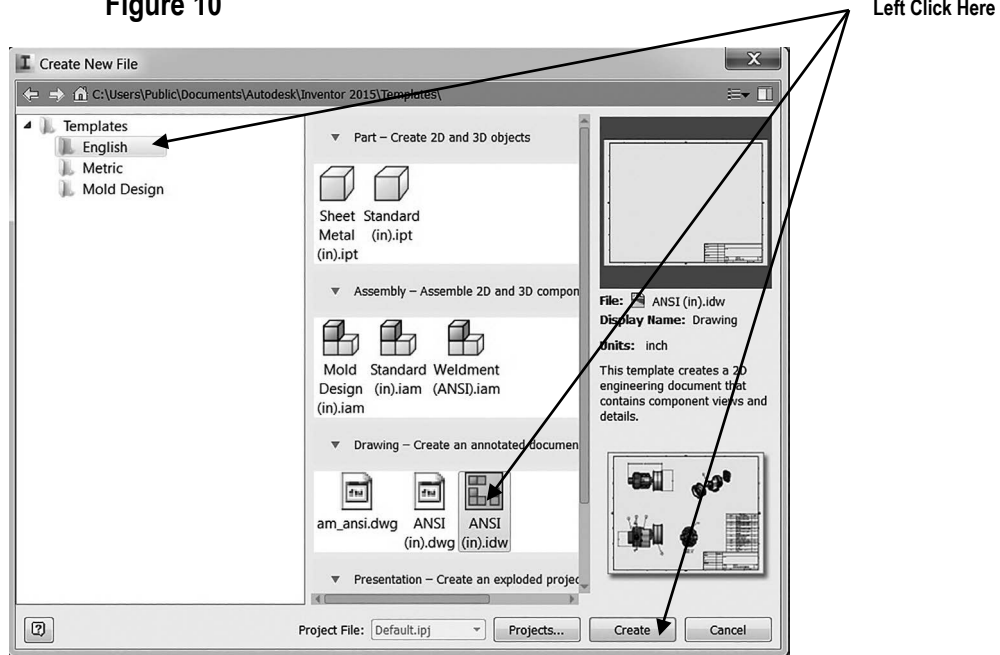
Figure 9   **Left Click Here**

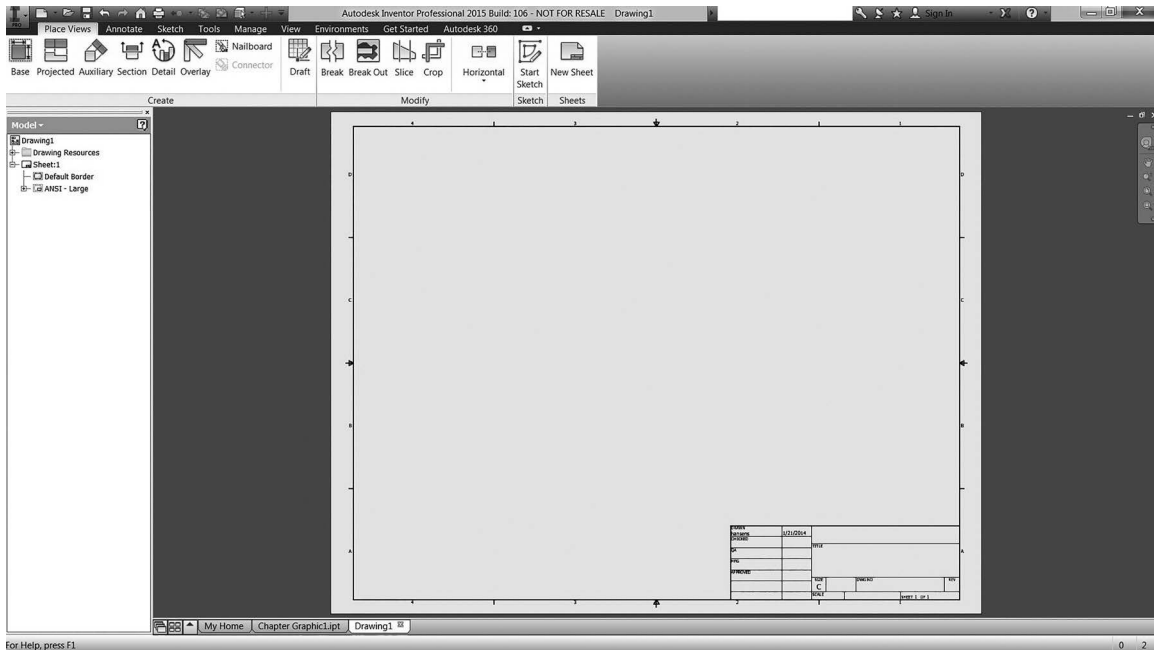## Create an Orthographic view using the Drawing Views Panel

13.   The Create New File dialog box will appear. Left click on the **English** folder. Left click on the **ANSI (in).idw.** Left click on **Create** as shown in Figure 10.
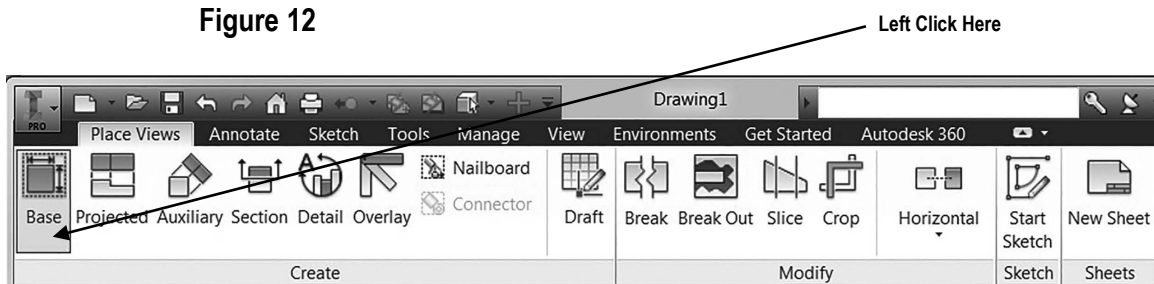
Figure 10

**14.**   Your screen should look similar to Figure 11.

Figure 11

15. Inventor is now in the Place Views Panel. Notice the commands at the top of the screen are now different. The width of the screen has been reduced to add instructional clarification.

16. Move the cursor to the upper left portion of the screen and left click on **Base** as shown in Figure 12.
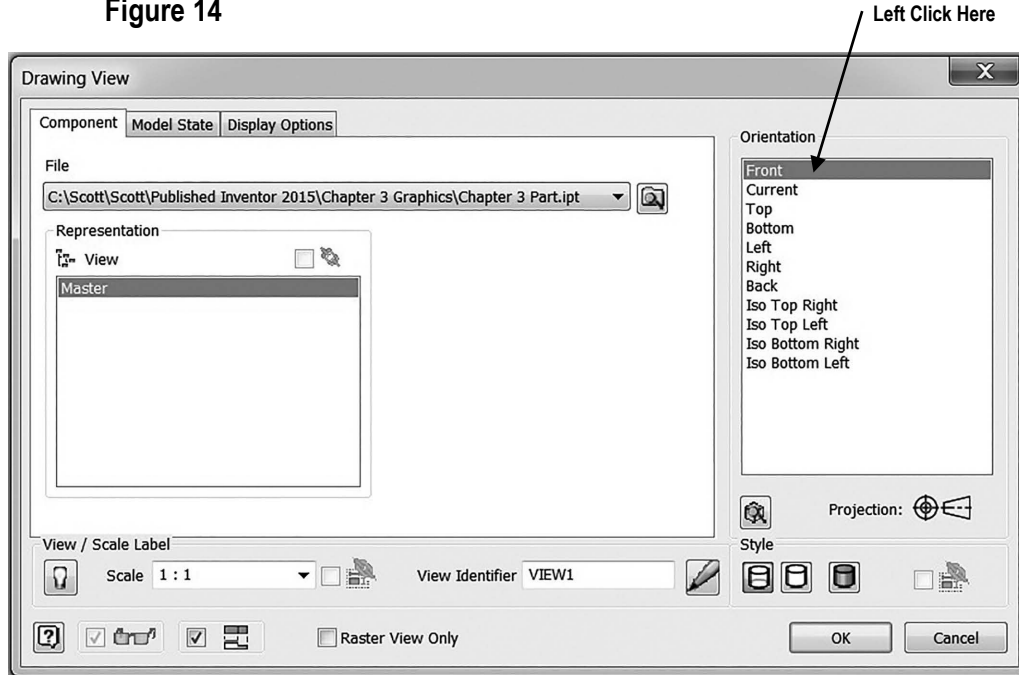
Figure 12

Left Click Here

17. The drawing of the wedge block should appear attached to the cursor. Move the cursor around to verify it is attached. If the part does not appear attached to the cursor, use the "Explore" icon to locate the part file as shown in Figure 13.

Figure 13

Left Click Here if Part is Not Attached to Cursor


Part Attached to Cursor
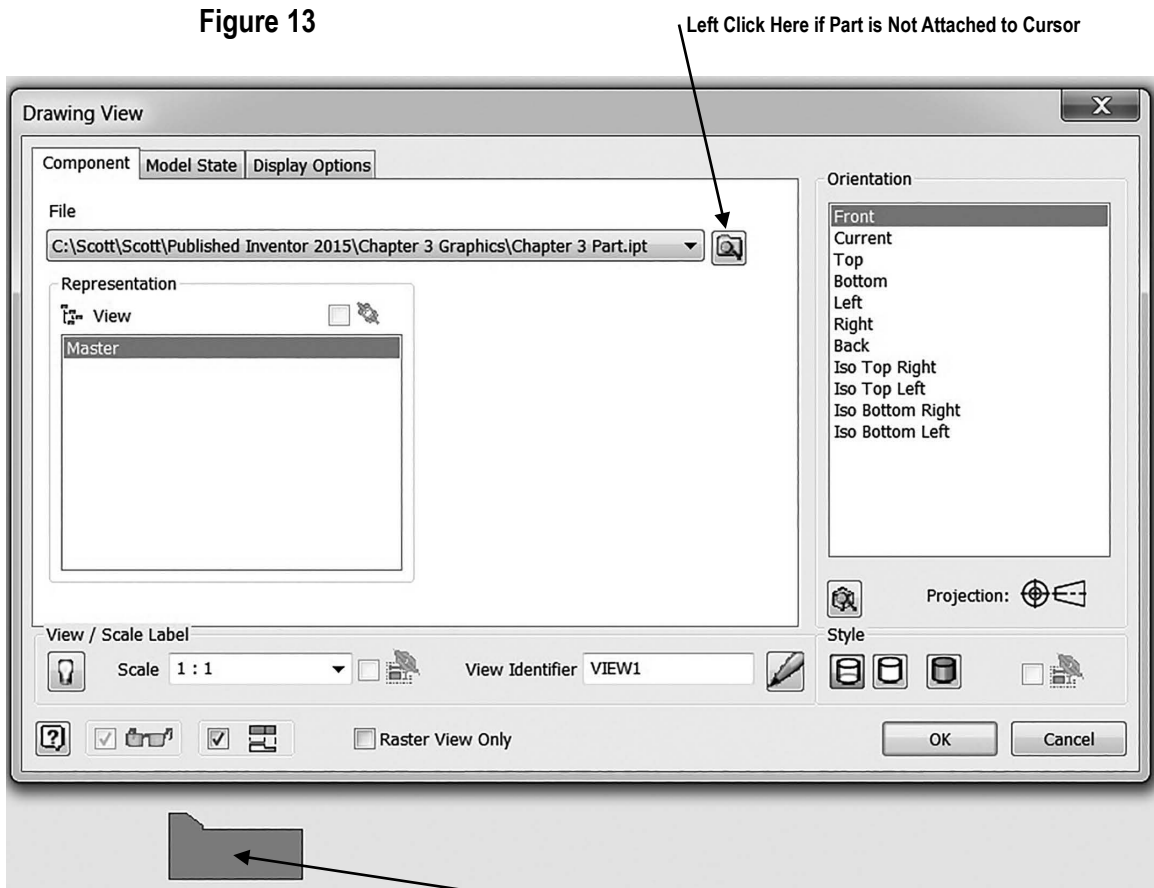
18. Different views can be selected for the front, top, and side views. Select the desired view from the Orientation selection box as shown in Figure 14. To understand how the orientation selection works, left click on **Top** or **Left** to have the top view or left view as the front (base) view.

Figure 14

19. Select the **Front** view for the base view. Left click on the **Scale** drop down box and set the drawing scale to **4:1**. The size of the wedge block will become larger as shown in Figure 15.
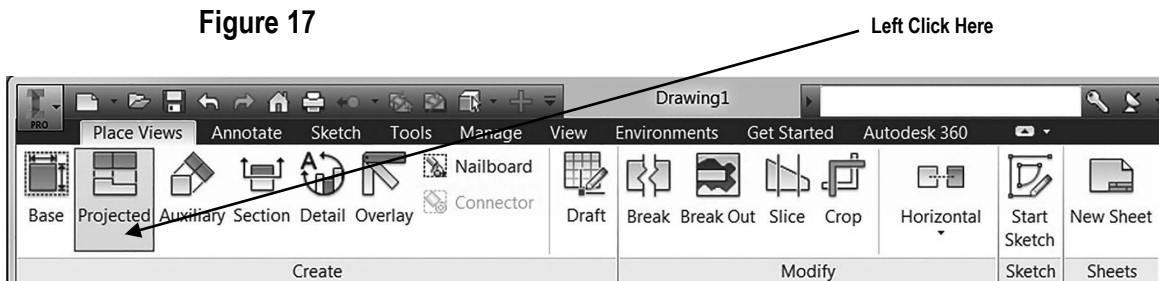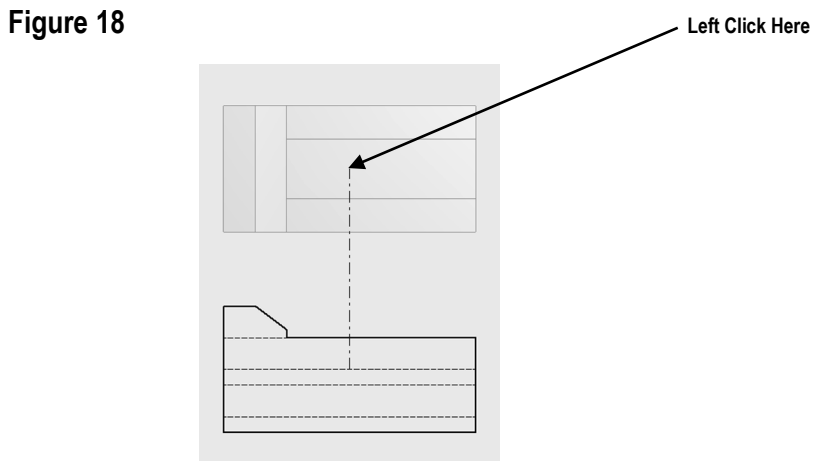
Figure 15
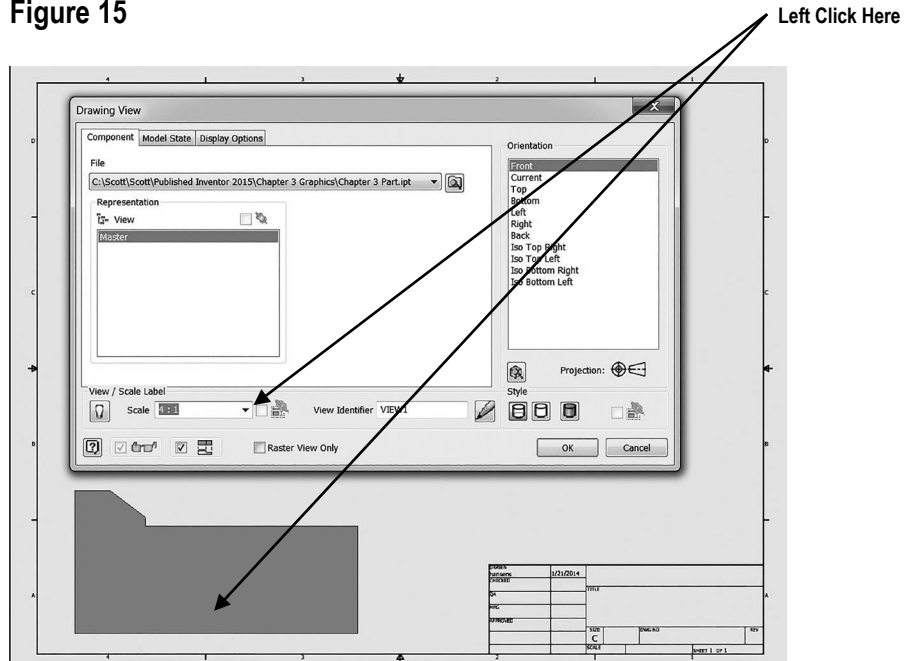
20. Place the part just above the title block that is in the lower right corner of the screen and left click once. This will place the part as shown in Figure 16.

Figure 16   **Left Click Here**
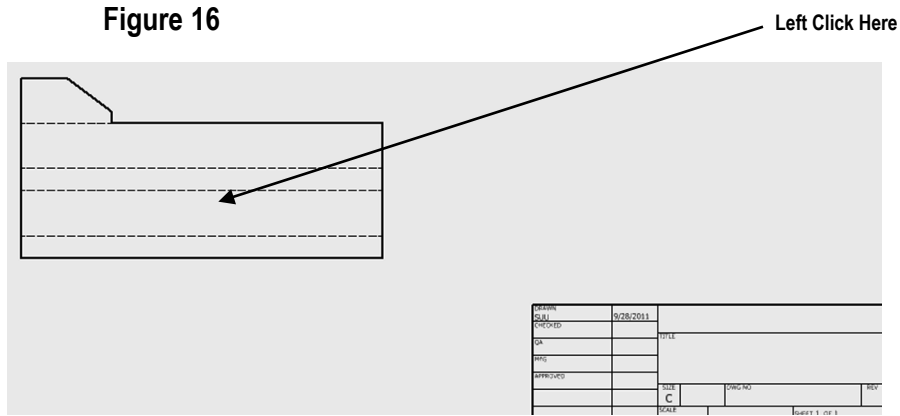
21. If the part was inadvertently placed too low or too high, move the cursor over the dots that surround the part, left click (holding the mouse button down), and drag the part to the desired location.

22. Move the cursor to the upper left portion of the screen and left click on **Projected** as shown in Figure 17.
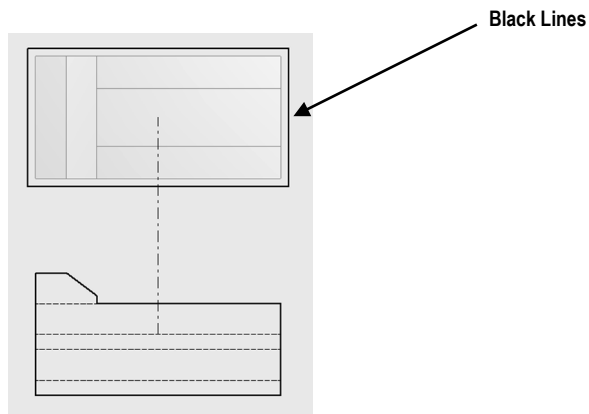
Figure 17   **Left Click Here**

23. The part will be attached to the cursor. Move the cursor upward and left click as shown in Figure 18.

Figure 18   **Left Click Here**

24. Notice the black lines around the top view as shown in Figure 19. This indicates that the view has been placed.
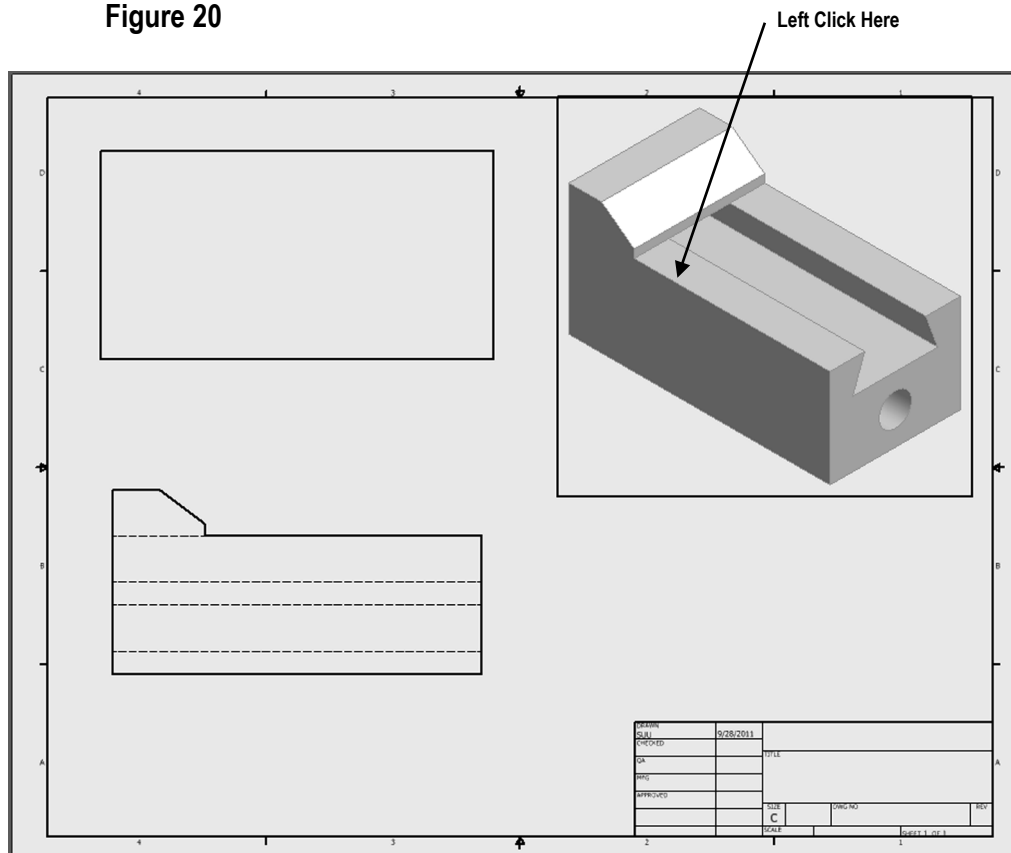
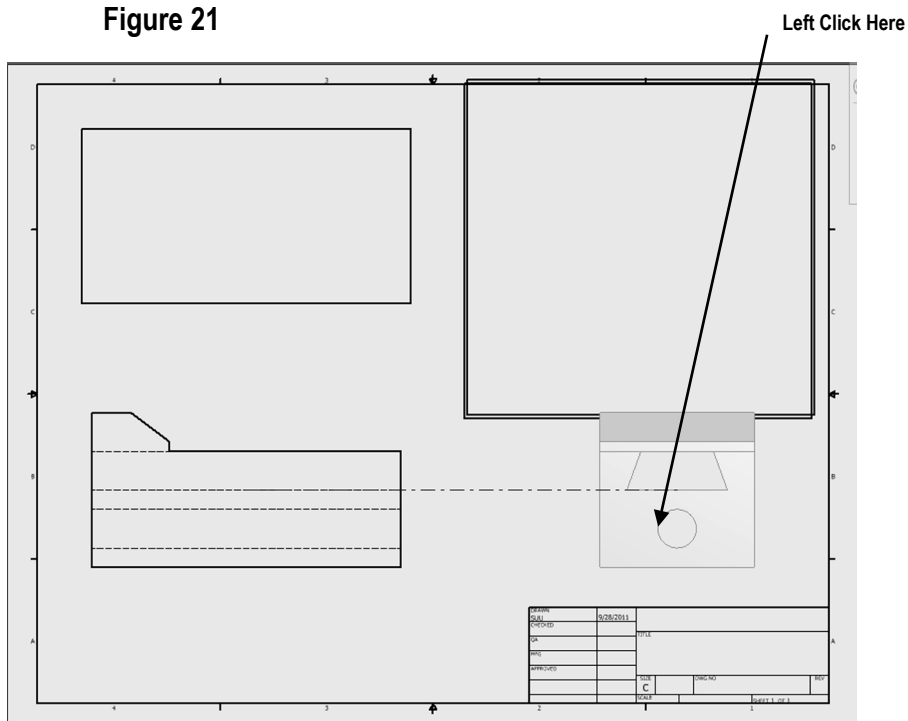**Figure 19**

Black Lines

Create a Solid Model using the Edit Views command

25. Move the cursor over to the upper right corner of the page and left click once as shown in Figure 20.
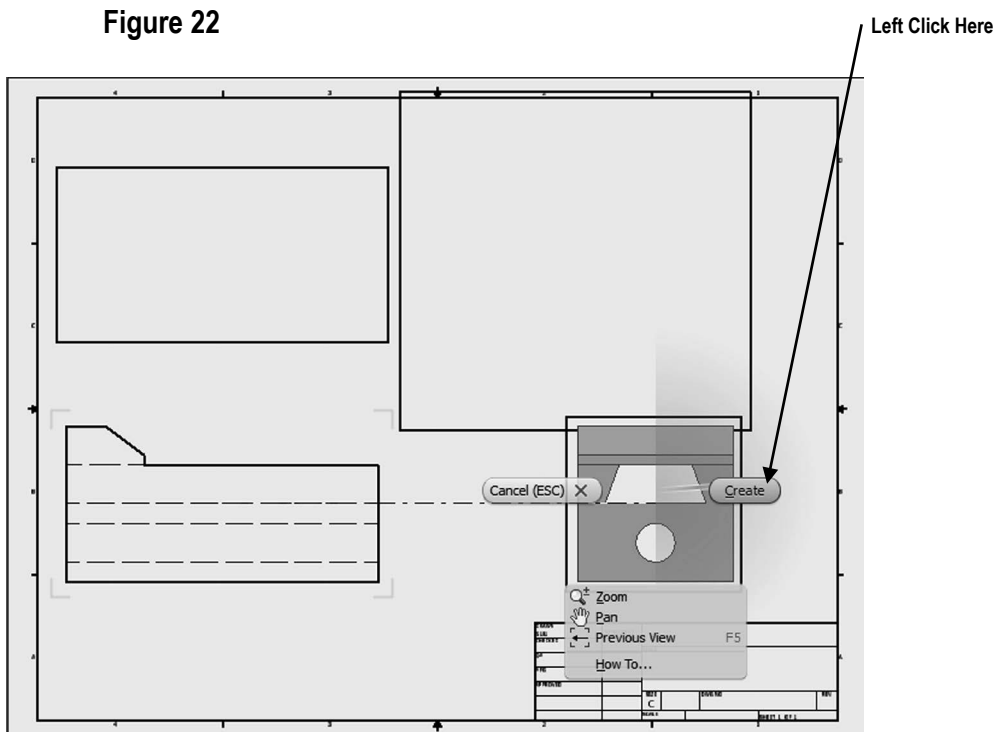
Figure 20

Left Click Here

26. Move the cursor down to where the side view will be located and left click once as shown in Figure 21.
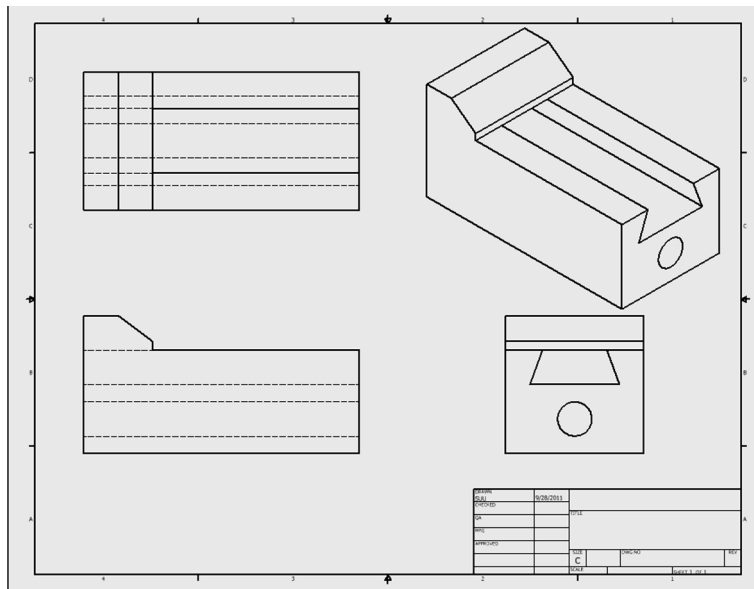
Figure 21

Left Click Here

27. Right click on the last view created (side view). A pop up menu will appear. Left click on **Create** as shown in Figure 22.
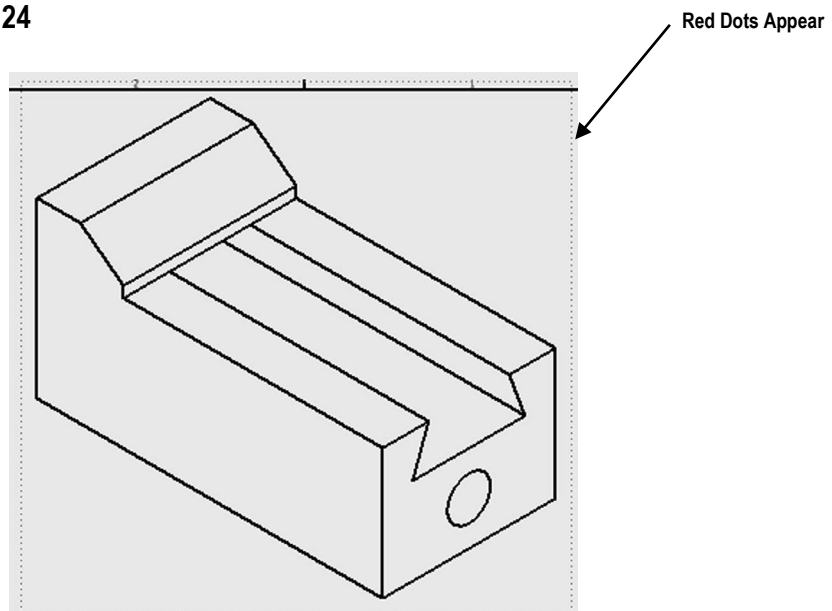
Figure 22

Left Click Here

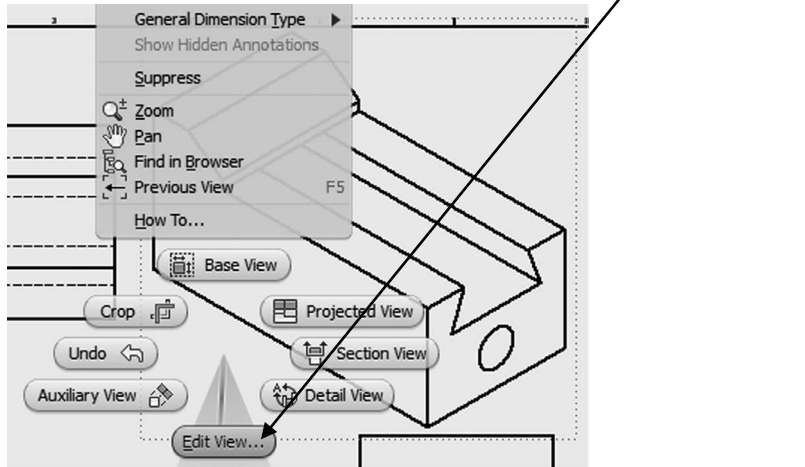**28.** Your screen should look similar to Figure 23.

Figure 23

29. Move the cursor over the isometric view in the upper right corner of the drawing. Red dots will appear as shown in Figure 24.

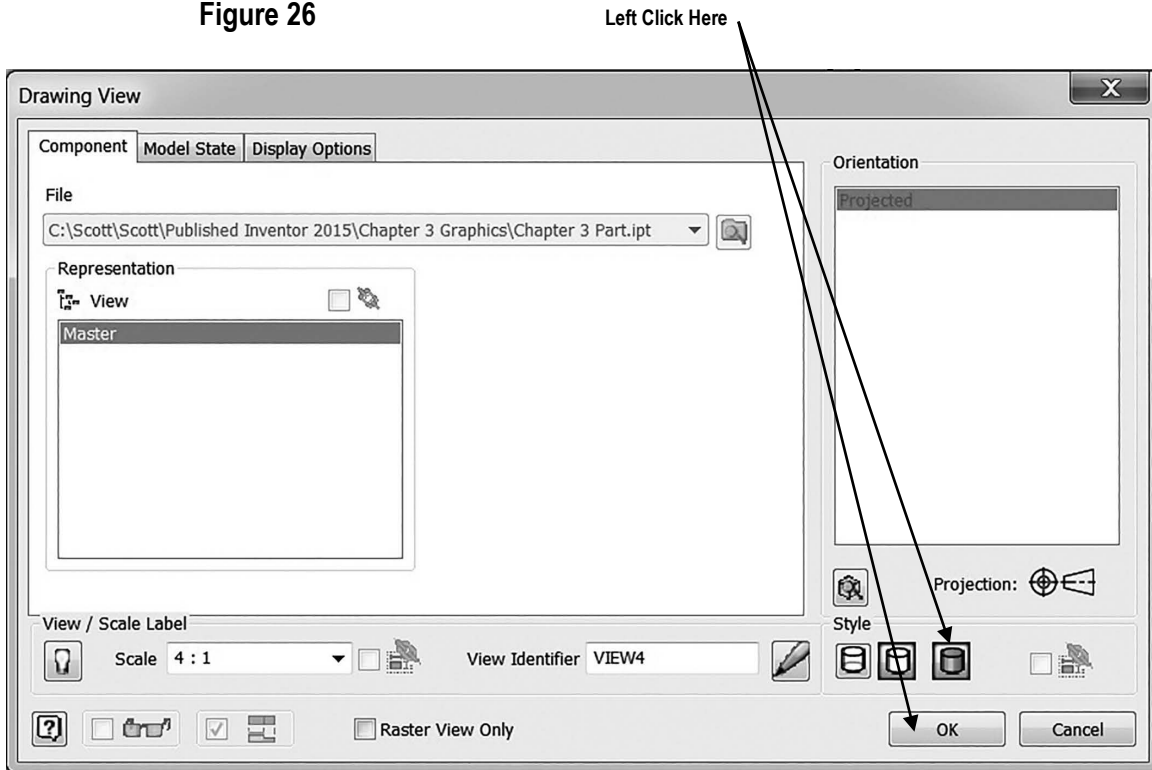**Figure 24**   **Red Dots Appear**

30. After the red dots appear, right click once. A pop up menu will appear. Left click on **Edit View** as shown in Figure 25.
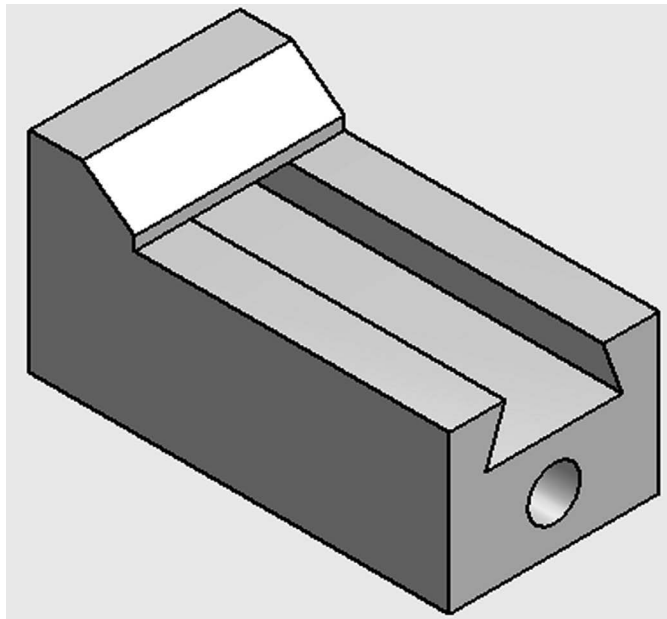
Figure 25

Left Click Here

31. The Drawing View dialog box will appear. Left click on the "blue barrel" to the right under Style. Left click on **OK** as shown in Figure 26.
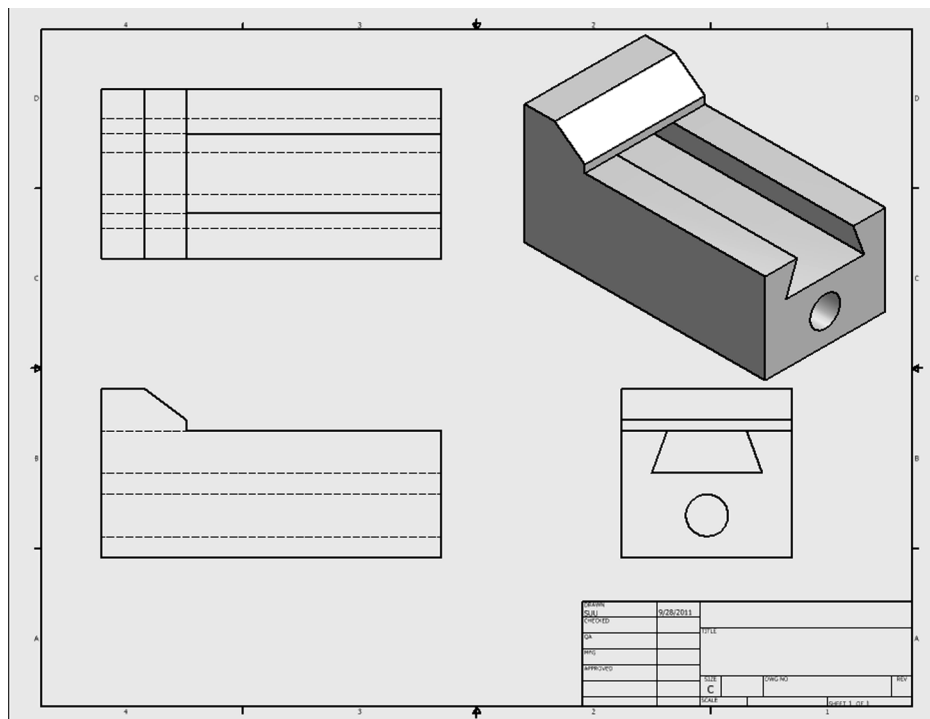
Figure 26

Left Click Here

32.   The isometric view will become a miniature solid model as shown in Figure 27.

Figure 27

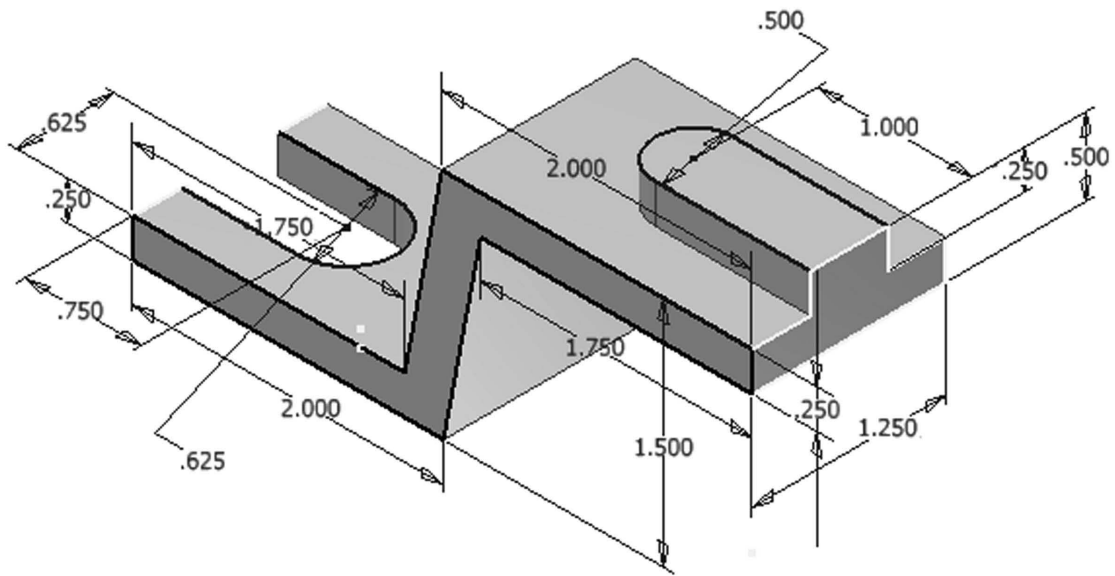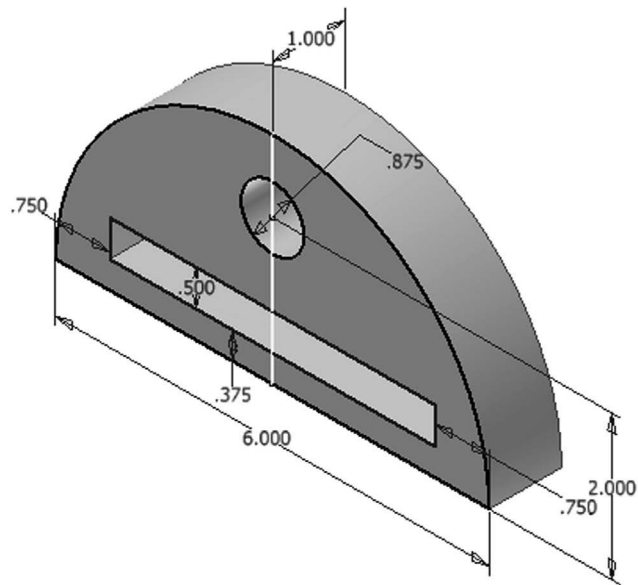**33.**   Your screen should look similar to Figure 28.

Figure 28

3-15

Chapter Problems

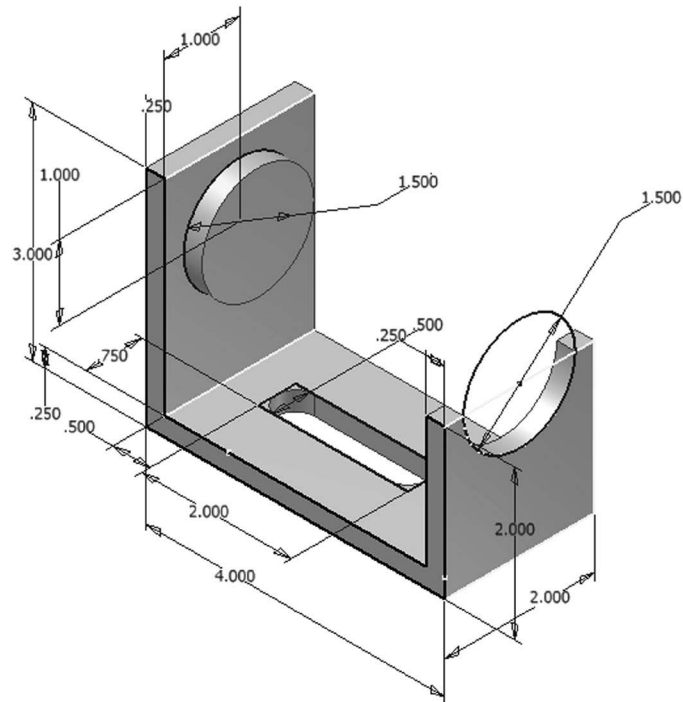**Create 3 view/multi view drawings of the following parts:**
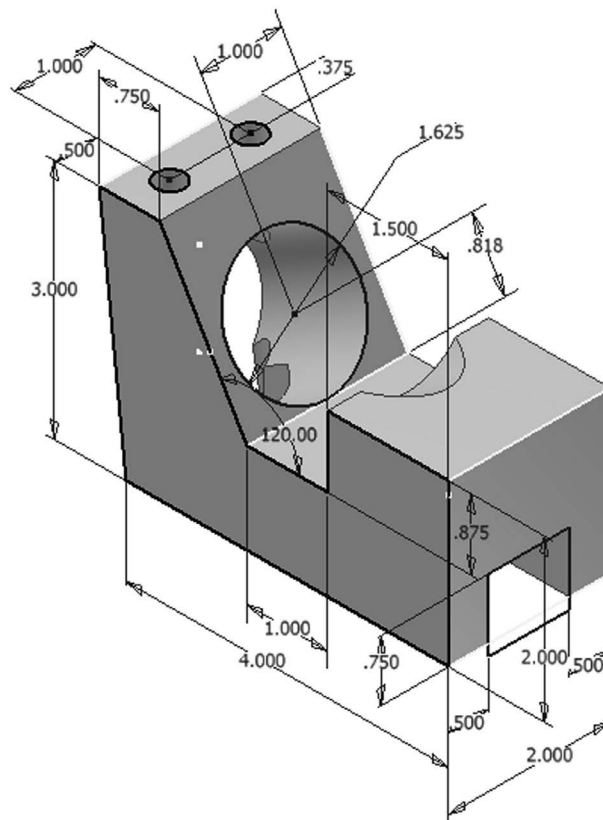
Problem 3-1

Problem 3-2
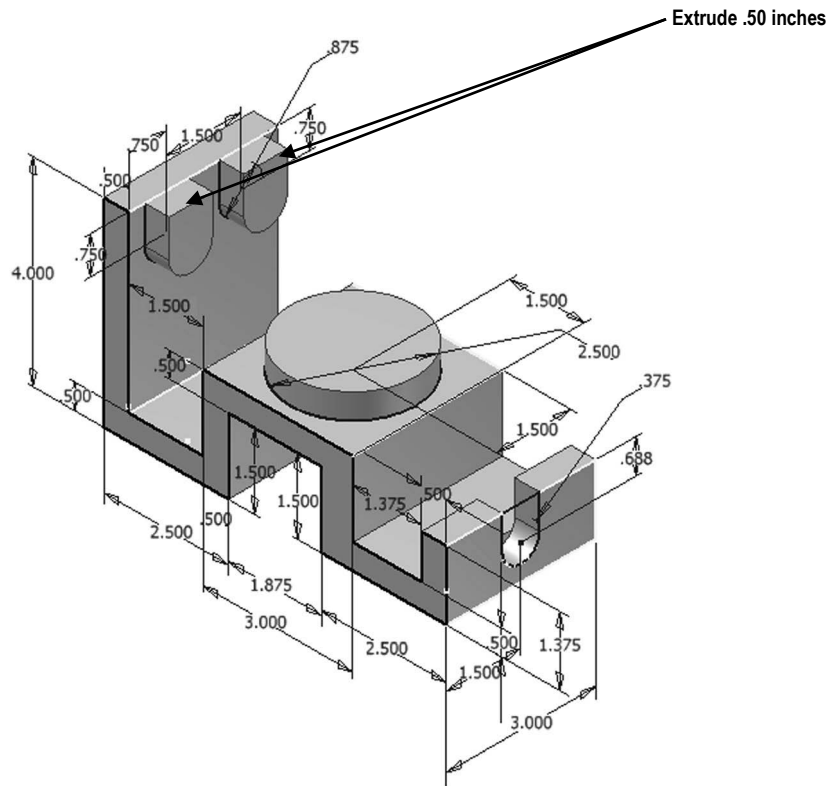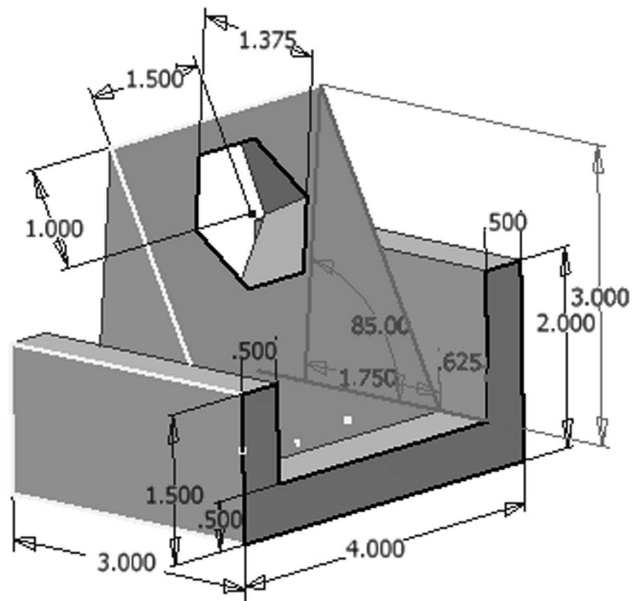
Problem 3-3

Problem 3-4

Hint: Use the 2 directional
Extrude-Cut to create
The 1.625 Diameter Hole

Problem 3-5

Extrude .50 inches

Problem 3-6

Problem 3-7

Extrude to .25 off of Base
Extrude to .50 off of Base
Extrude to .75 off of Base

.500

.500

.688

.500

.625

.438

1.100

2.500

.275

.375

.275

.250

1.000

Problem 3-8

Cut to 0.25 Depth

1.000

.500

.375

.400

2.000

.375

.750

.875

.500

.750

.500

1.000

.375

1.250

1.500

2.000

4.000