

Lab Exercise 13-1**Time Allowed: 30 Min.****Drawing Specifications**

| Name | Template | Units | Text Style | Font |
|---------------------|-------------------|--------|------------|------|
| AutoCAD 2D Lab 13-1 | Module Template B | Inches | N/A | N/A |

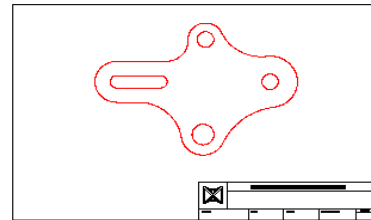
Note: Color, Linetype, and Lineweight are all ' ByLayer ' unless otherwise instructed.

Layering Scheme

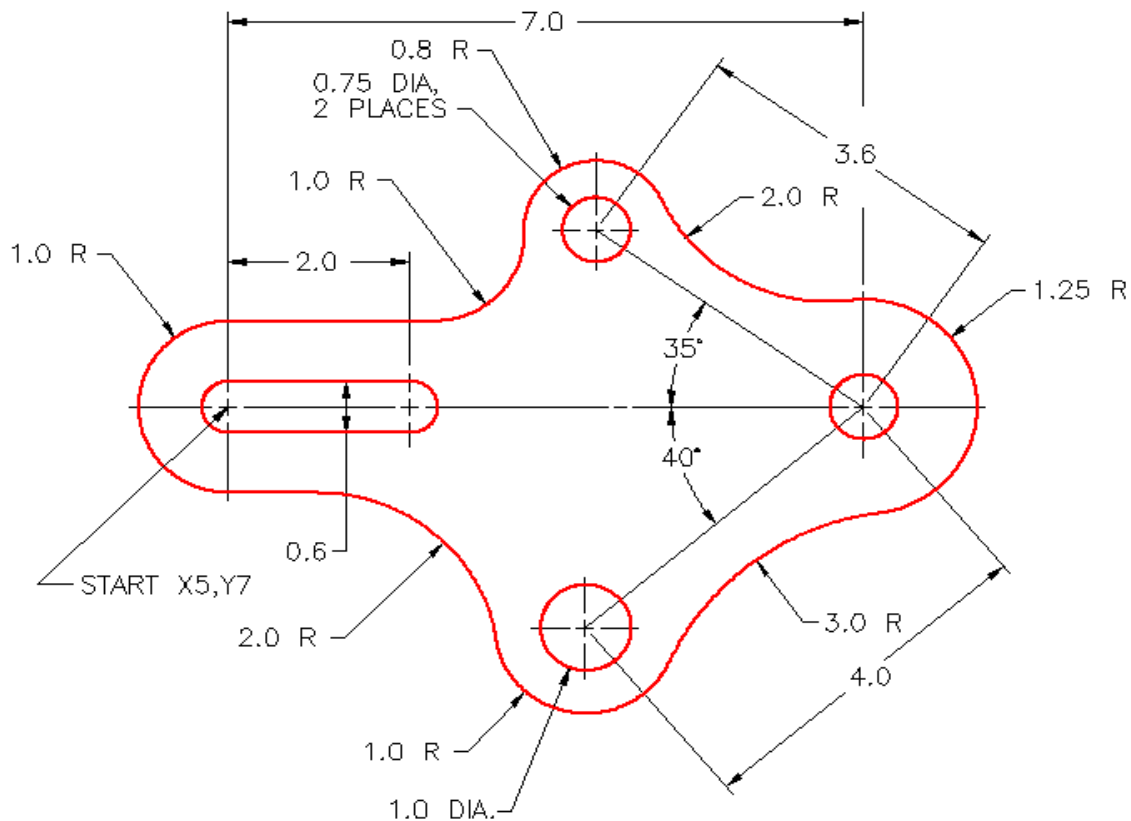
| Objects on Layer | Name | Color | Linetype | Lineweight |
|----------------------|--------------|-------|------------|------------|
| Construction Objects | Construction | 253 | Continuous | N/A |
| All Objects | Object | Red | Continuous | N/A |

Instructions:

1. Setup the layers using the Layering Scheme shown above.
2. Draw the object shown below using the layering scheme above.
3. Draw all construction objects on layer Construction.
4. Check your drawing with the key.
5. If you have any errors, correct your drawing.
6. Turn layer Key off and freeze layer Construction.
7. Save and close the drawing.

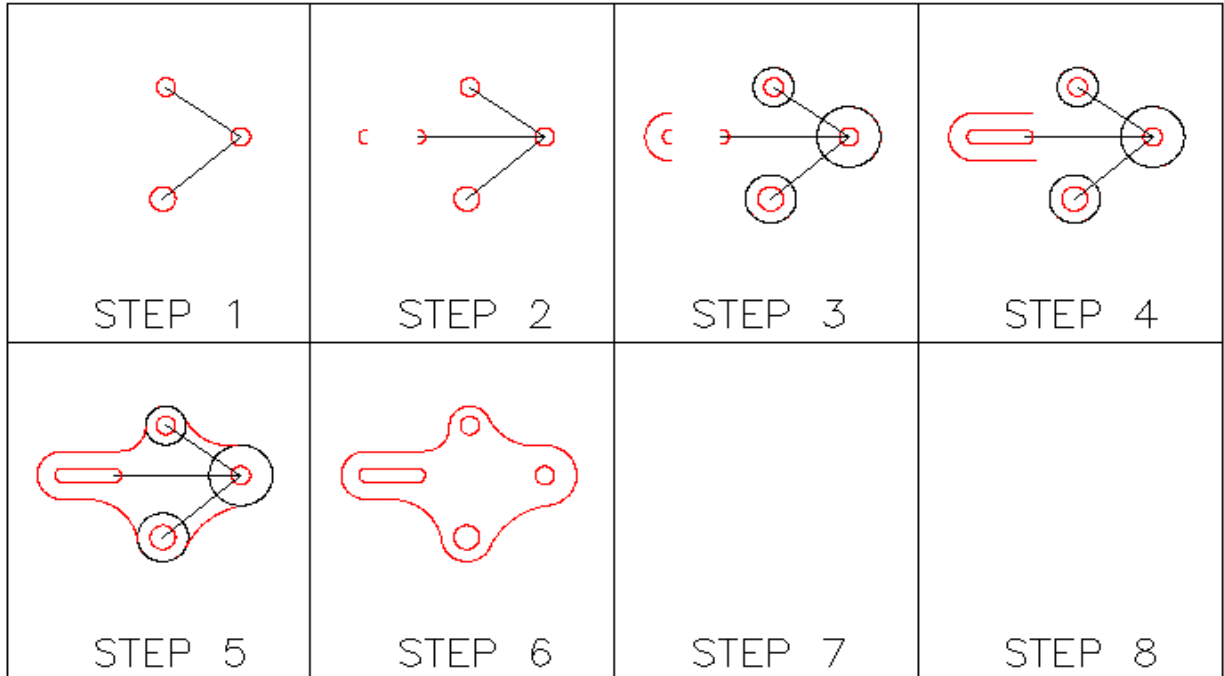


Completed Drawing



Construction Techniques

The following steps are the construction technique suggested by the author to help you learn how to construct objects using AutoCAD. It is only the suggested method and if you can complete the drawing accurately using a different construct technique, that is what is important. You may want to compare your construction technique with the authors.



Construction Hints

Do your best to complete the lab exercise drawing without using the following hint(s). If you get stuck and can't complete it on your own, use the following hint(s) to help you.

Hint 1

Before you can insert the fillets on the left side of the object, you must insert two horizontal lines from the end of the arc. These can be any length. The FILLET command will automatically trim them. See Figure Hint 1.

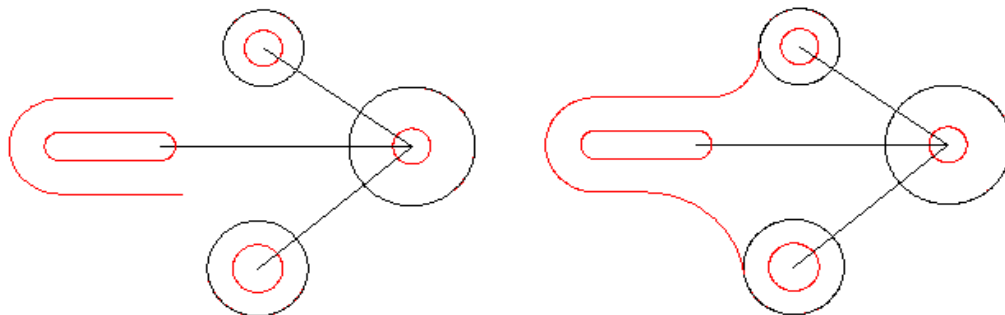


Figure Hint 1

Lab Exercise 24-1

Time Allowed: 45 Min.

Drawing Specifications

| Name | Template | Units | Text Style | Font |
|---------------------|--------------------|-------------|------------|------|
| AutoCAD 2D Lab 24-1 | Module Template A3 | Millimeters | N/A | N/A |

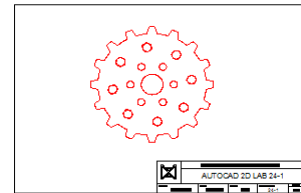
| Layering Scheme | | | | |
|------------------------|-----------------|-------------|------------|------------|
| Objects on Layer | Name | Color | Linetype | Lineweight |
| Construction Objects | Construction | 253 | Continuous | N/A |
| All Objects | Object | Red | Continuous | N/A |
| Text in the Titleblock | Titleblock Text | White/Black | Continuous | N/A |

Instructions:

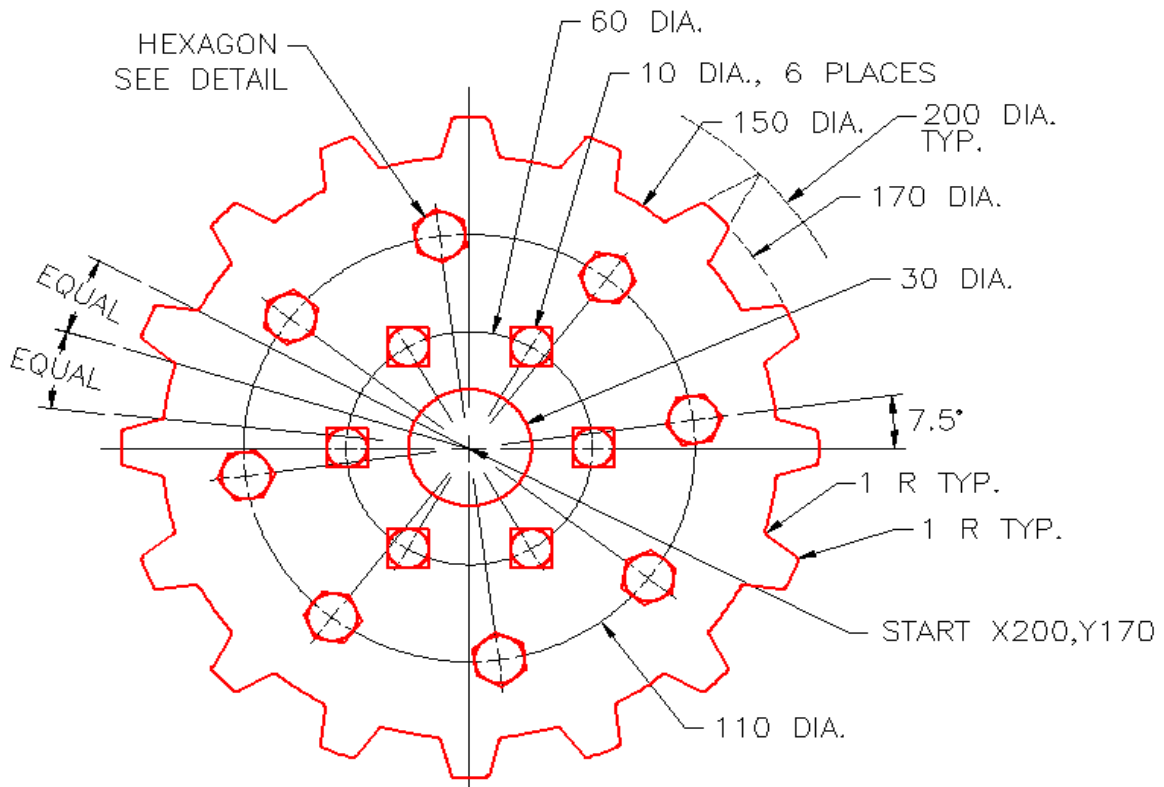
1. Draw the object below using the ARRAY.
2. Fill in the titleblock using the standards in Module 20, page 20-10.



Detail of Hexagon



Completed Drawing



Construction Hints

Do your best to complete the lab exercise drawing without using the following hint(s). If you get stuck and can't complete it on your own, use the following hint(s) to help you.

Hint 1

Figure Hint 1-1 - Draw and then array the line 64 times.

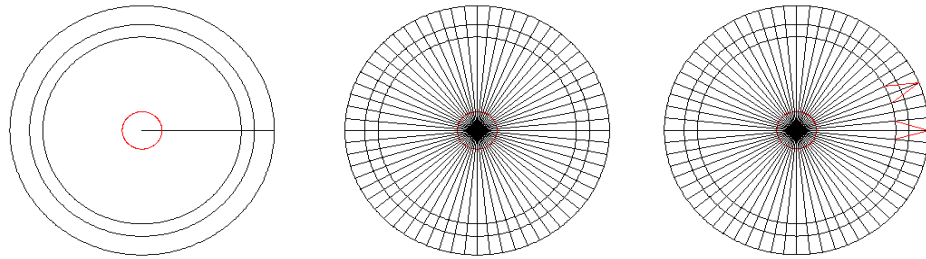


Figure Hint 1-1

Figure Hint 1-2 and 1-3 - Trim the circles.

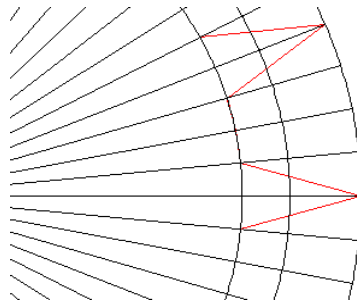


Figure Hint 1-2

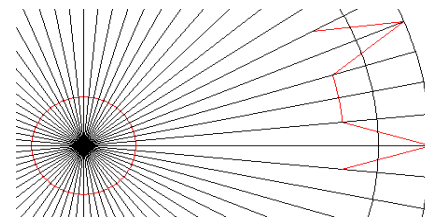


Figure Hint 1-3

Figure Hint 1-4 and 1-5 - Fillet and trim the lines.

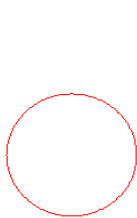


Figure Hint 1-4



Figure Hint 1-5



Hint 2

Figure Hint 2 - Draw the hexagon first with the top and bottom lines horizontal. Then rotate it to the correct angle.

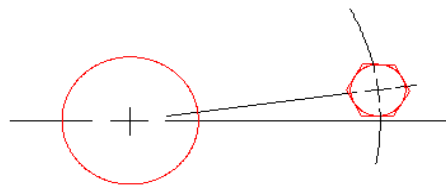
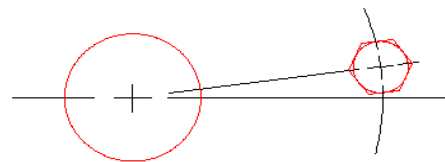


Figure Hint 2



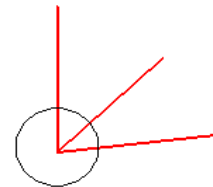
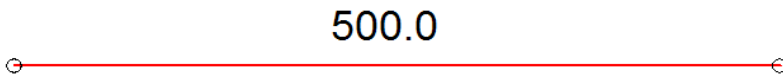
Lab Exercise 28-2

Time Allowed: 60 Min.

| Drawing Specifications | | | | |
|------------------------|-------------------|-------------|------------|------------|
| Name | Template | Units | Text Style | Font |
| AutoCAD 2D Lab 28-2 | Module Template C | Feet | N/A | N/A |
| Layering Scheme | | | | |
| Objects on Layer | Name | Color | Linetype | Lineweight |
| Construction Objects | Construction | 253 | Continuous | N/A |
| Map Lines | Map | Red | Continuous | N/A |
| Map Dimensions | Map Dimension | Cyan | Continuous | N/A |
| Map Lot Size Text | Map Notes | White/Black | Continuous | N/A |
| Map Text | Map Text | 200 | Continuous | N/A |
| Text in the Titleblock | Titleblock Text | White/Black | Continuous | N/A |


Instructions:

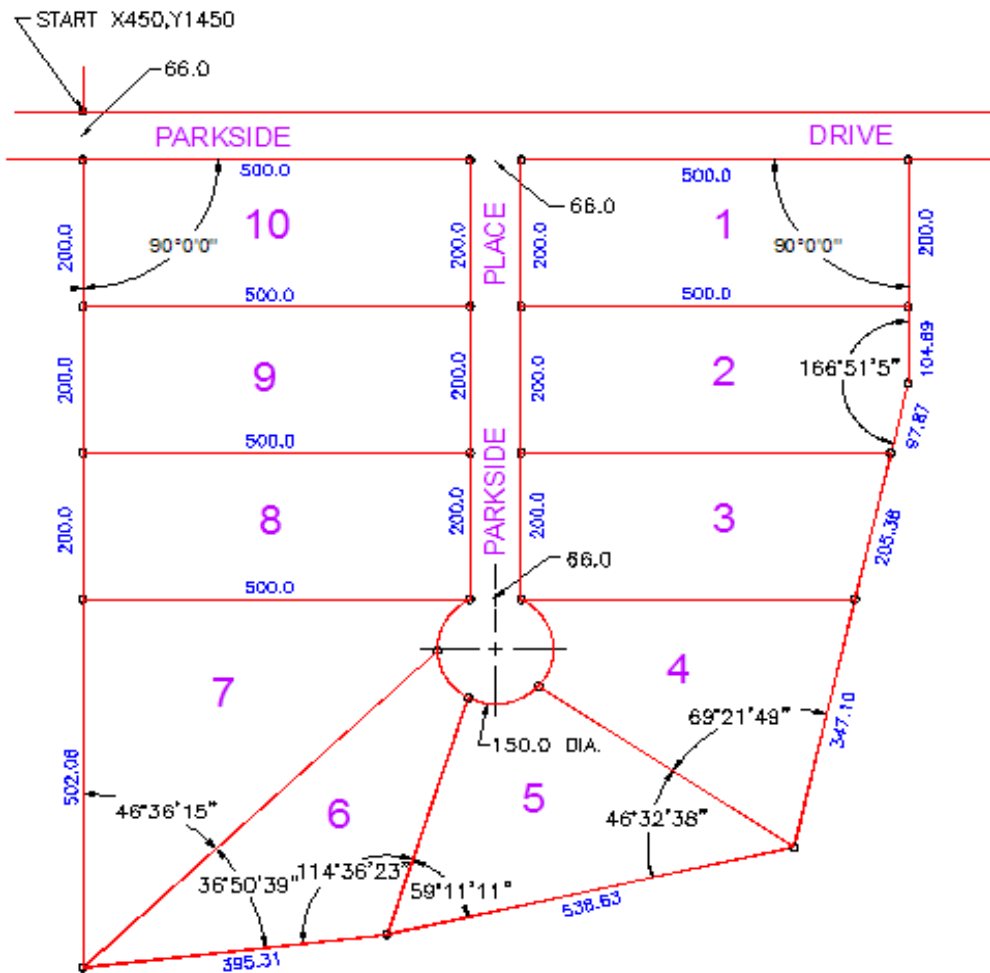
- Since the object you will be drawing is large, you will have to scale the drawing titleblock larger. Complete the following steps:
 - Start a new drawing using the Module Template C.
 - Using the SCALE command, and the base point of 0,0, scale the complete titleblock and border to a scale factor of 100. In a future module, there will be a complete explanation of why this number is used. For now, just use the number given to you.
- Draw the map shown on page 28-12. The input is feet and decimals of a foot. Set the Length Type to Decimals in the UNITS command.
- Add the length of the lot lines along each lot as shown on the map. Pick a good height with the text style Map with the font Arial.
- Place the lot numbers and the street names on layer Map Text.
- Fill in the titleblock as shown.



Mini Survey Plan Lesson

The length of the lots, on survey maps, is dimensioned by placing the length parallel and along the lot line it is referring to. The length is measured from corner of lot to corner of the lot. In the example above, the distance is 500.0 feet. The pin, small circles at the ends, have nothing to do with the dimensions. They only show where the surveyor has placed a metal pin in the ground when the survey was completed. When you draw the map, draw all the lines and then insert circles of 10 feet dia. at the ends of the lines.

| | | | | |
|---|---|----------------|---------------------|-----------------|
|  | AutoCAD SELF-PACED LEARNING MODULES | | | |
| | SUBDIVISION MAP FOR PARKSIDE ESTATES | | | |
| DRAWN YOUR NAME | DATE 02-20-2006 | SCALE 1:100 | DRAWING NO. 28-2 | SHEET 1 OF 1 |



6. Find the area of each lot to two decimal places and place the text on the drawing using the example below as a guide. Pick a good text height using the text style Map you created earlier. Place it on layer Map Notes.

AREA OF LOTS

LOT 1 = 100,000.00 SQ/ FT.

LOT 2 =

LOT 3 =

LOT 4 =

LOT 5 =

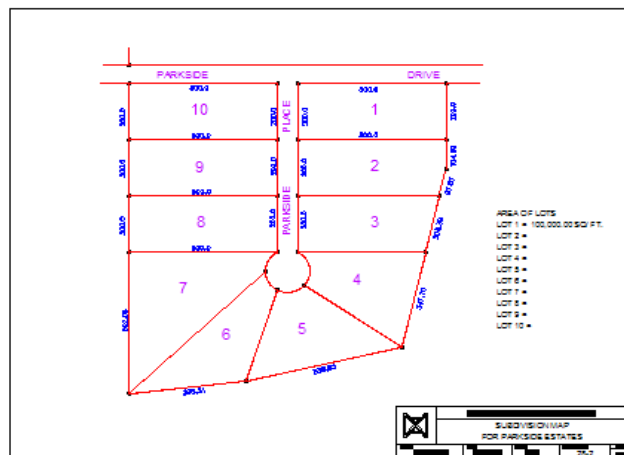
LOT 6 =

LOT 7 =

LOT 8 =

LOT 9 =

LOT 10 =



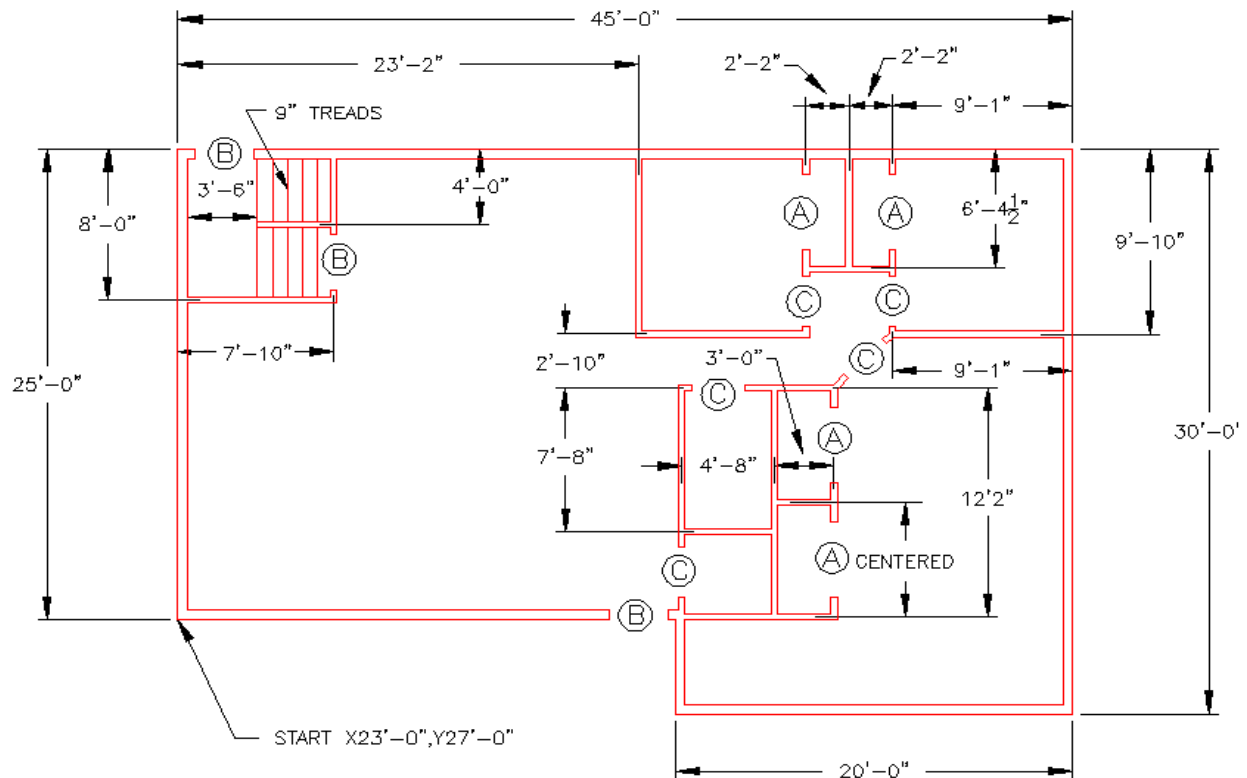
Completed Drawing

Lab Exercise 27-3**Time Allowed: 60 Min.****Drawing Specifications**

| Name | Template | Units | Text Style | Font |
|----------------------|-------------------|-------------|------------|------------|
| AutoCAD 2D Lab 27-3 | Module Template C | Feet/Inches | N/A | N/A |
| Layering Scheme | | | | |
| Objects on Layer | Name | Color | Linetype | Lineweight |
| Construction Objects | Construction | 253 | Continuous | N/A |
| Walls | Floor Plan | Red | Continuous | N/A |

Instructions:

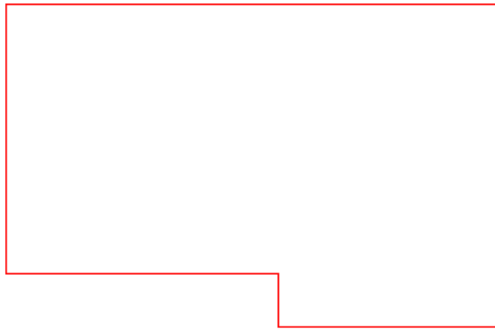
- Since the object you will be drawing is large, you will have to scale the drawing border and titleblock larger than it is. Complete the following steps:
 - Start a new drawing using Module Template C.
 - Using the SCALE command and the base point of 0,0, scale the border and titleblock at a scale factor of 48. In Module 39 and 40, there will be a complete explanation of why this number is used.
- Using the command ZOOM and option E, zoom the drawing will to fit the screen.
- Using the UNITS command, change the units to Architectural with the 1/16" precision.
- Draw the floor plan of the house shown below. Use lines to draw it. Use feet and inches as unit input.



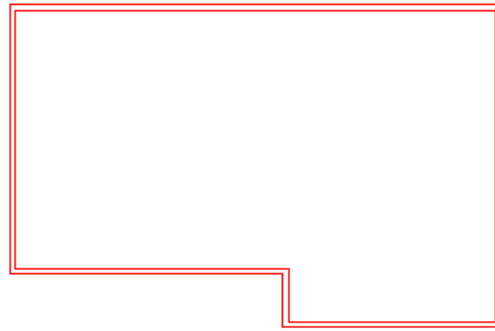
OUTSIDE WALLS ARE 6" THICK
INSIDE WALLS ARE 4" THICK

Step 1 Draw the outside boundary of the house.

Step 2 Offset the outside boundary 6 inches toward the inside of the house. Trim or extend the lines to clean up the corners.

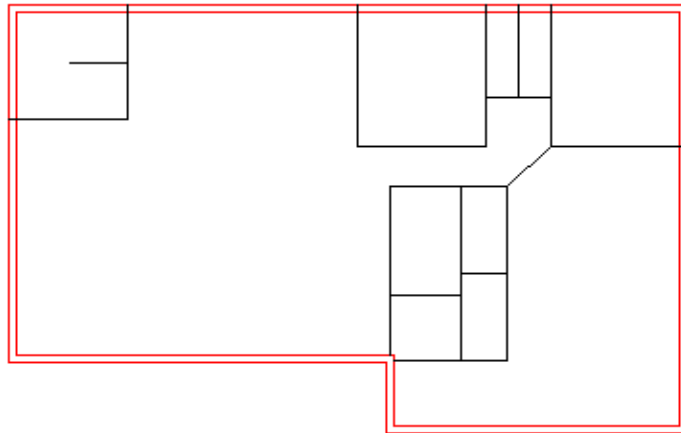


Step 1



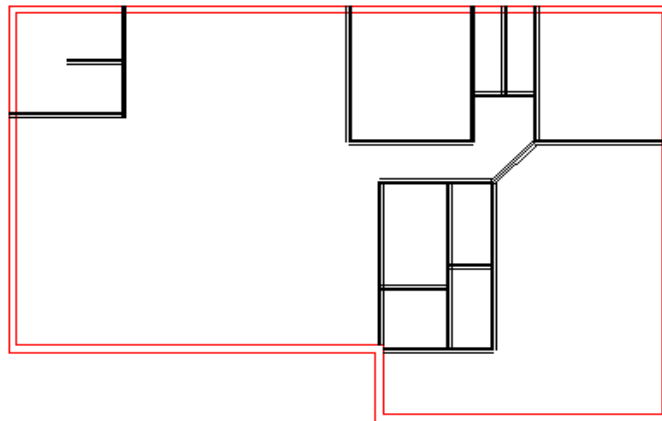
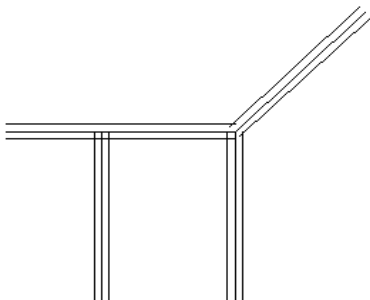
Step 2

Step 3 On layer Construction, draw the center lines at the location of the inside walls.



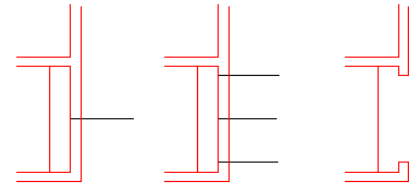
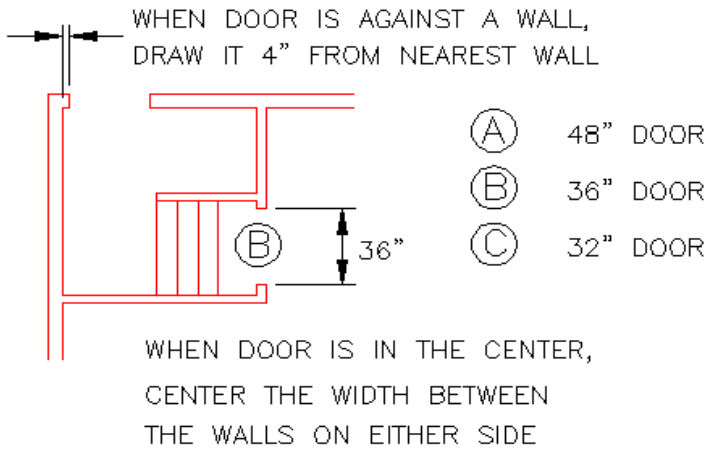
Step 3

Step 4 Offset the center lines 2 inches on each side the centerline to create 4 inch walls.

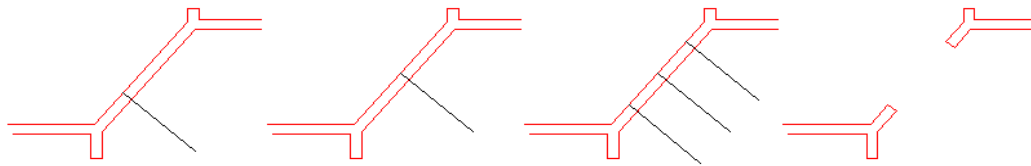


Step 4

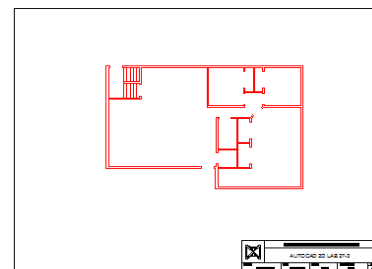
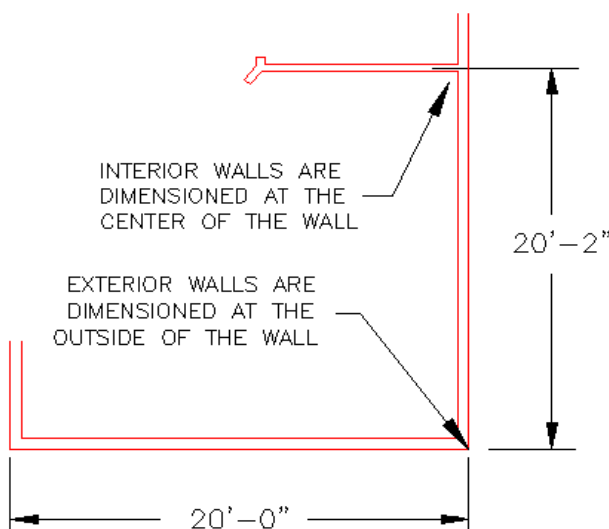
Step 5 Here are some examples to help you if you are not familiar with drawing floor plans:



HINT: TO DRAW A DOOR WHERE WALLS ARE HORIZONTAL AND VERTICAL, DRAW A LINE FROM THE MIDPOINT OF THE DOOR OPENING WITH ORTHO MODE ENABLED. OFFSET ONE-HALF THE DOOR WIDTH AND TRIM.



HINT: WHEN THE WALLS ARE INCLINED, DRAW A LINE FROM A POINT IN SPACE SNAPPING PERPENDICULAR TO THE WALL. THEN MOVE THE LINE SNAPPING THE END TO THE MIDPOINT. OFFSET ONE-HALF THE DOOR WIDTH AND TRIM.



Completed Drawing

6. Complete the titleblock.

Lab Exercise 40-2**Time Allowed: 40 Min.****Drawing Specifications**

| Name | Template | Units | Text Style | Font |
|---------------------|----------|--------|------------|------|
| AutoCAD 2D Lab 40-2 | N/A | inches | N/A | N/A |

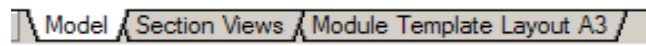
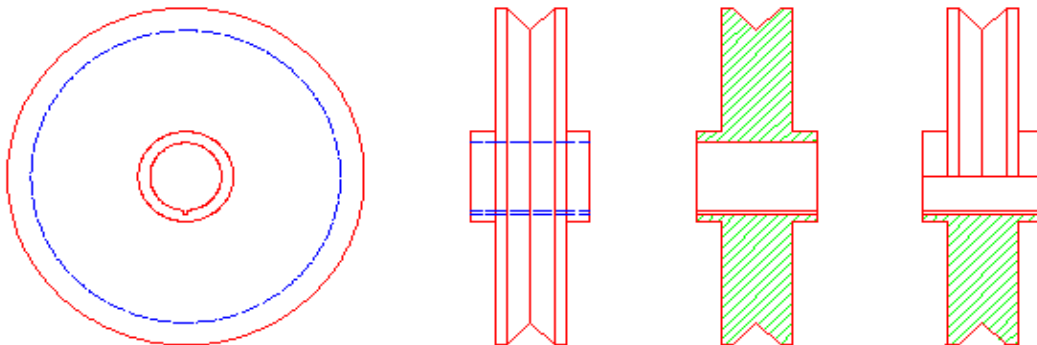
Note: Color, Linetype, and Lineweight are all ByLayer unless otherwise instructed.

Layering Scheme

| Objects on Layer | Name | Color | Linetype | Lineweight |
|---------------------------|-----------|-------------|------------|------------|
| Center Lines | Center | Magenta | Continuous | See Below |
| Hatch | Hatch | Green | Continuous | See Below |
| Dimensions | Dimension | Blue | Continuous | See Below |
| Text on Layout Titleblock | Text | White/Black | Continuous | N/A |
| Viewports | Viewport | Green | Continuous | Default |

Instructions:

1. Open the drawing AutoCAD 2D Lab 32-1.
2. Save the drawing with the name AutoCAD 2D Lab 40-2
3. Delete the titleblock, border and titleblock text and the layers Titleblock and Titleblock Text.
4. Using HATCHEDIT, change the hatching to ANSI31 I on both views.
5. Change the color for layer Hatch to Green.
6. Rename the layout tab Layout 1 to Section Views. From the template file Module Template Layout Metric, get the layout Module Template Layout A3. The layout tabs should appear as shown in Figure Step 6.
7. In model mode, the drawing should appear similar to Figure Step 7.

**Figure Step 6****Figure Step 7**

8. For layout tab Section Views set the following:
 - a) Plotter: None
 - b) Paper Size: ISO A1 (594X841mm) - Landscape
9. In the layout tab Section Views, create a viewport using most of the paper. Create the viewport on layer Viewport. Set the scale at 1.5:1 and lock the display. The layout should appear as shown in Figure Step 9.

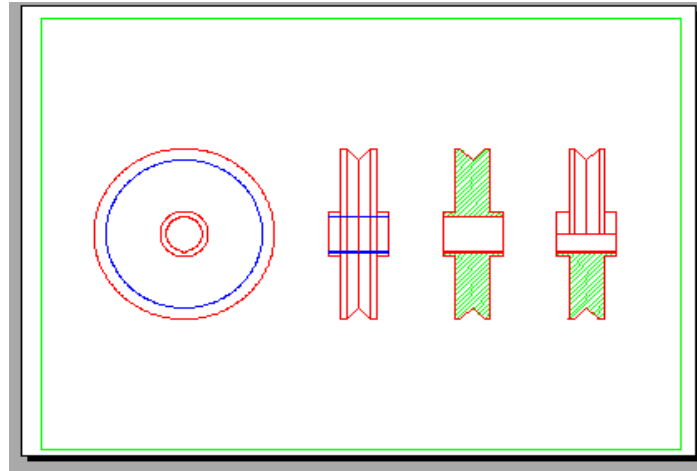


Figure Step 9

10. On layer Center, add the center lines in paper space. Layout Section View should now appear as Figure Step 10.

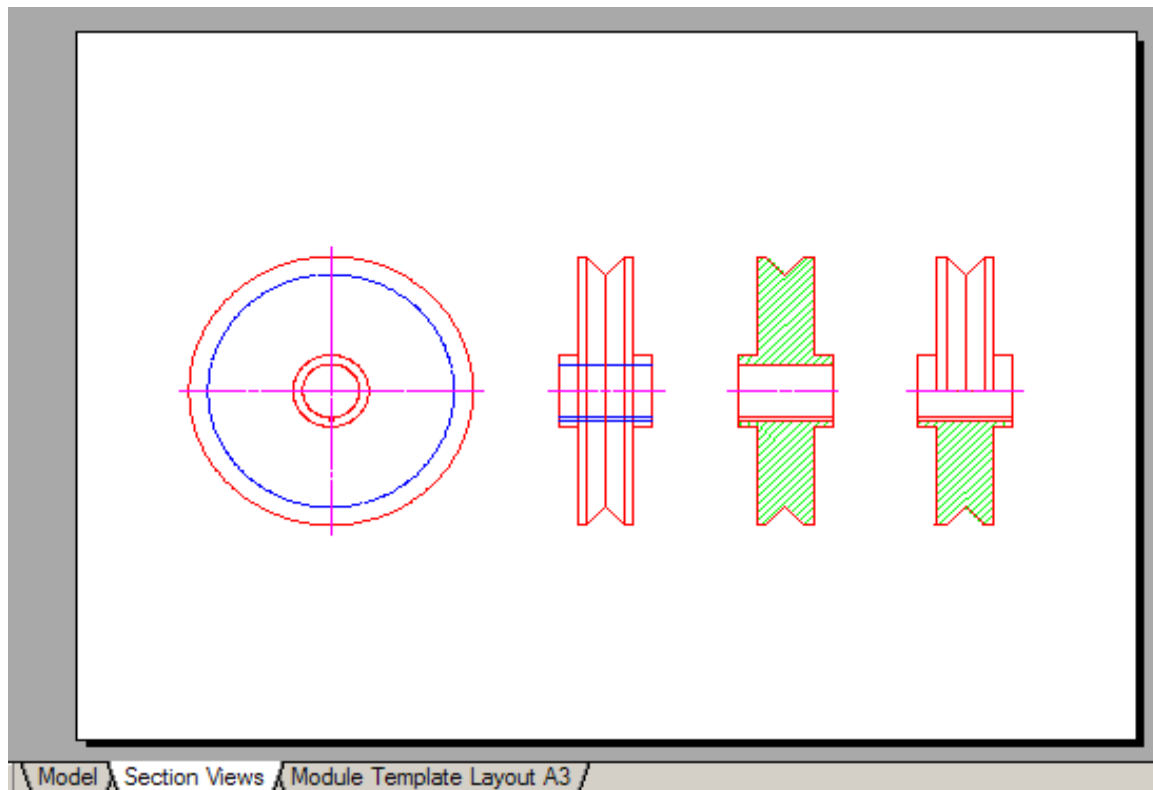


Figure Step 10

11. For layout tab Module Template Layout A3 set the following:
 - a) Plotter: None
 - b) Paper Size: ISO A3 (297X420mm) - Landscape
12. In the layout tab Module Template Layout A3, create two viewports as shown in Figure Step 12. Create the viewports on layer Viewport. Set the scale as follows and lock their display.
 - Scale: Left View = 1:1.5
 - Scale: Right View = 2.5:1

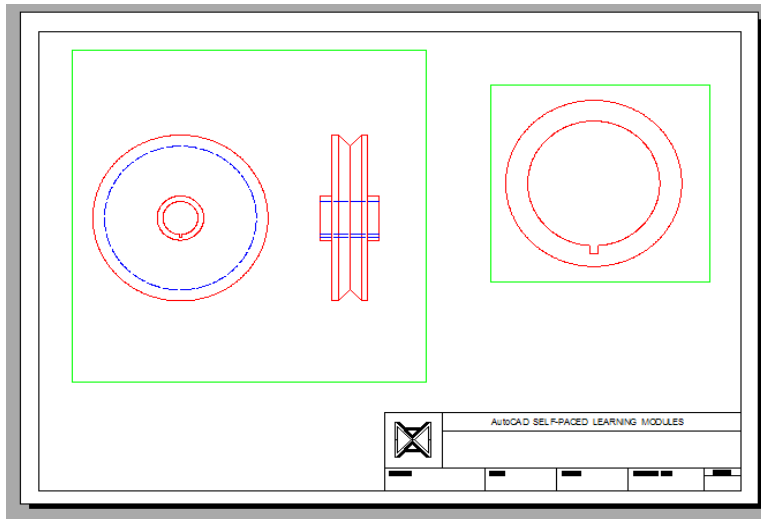
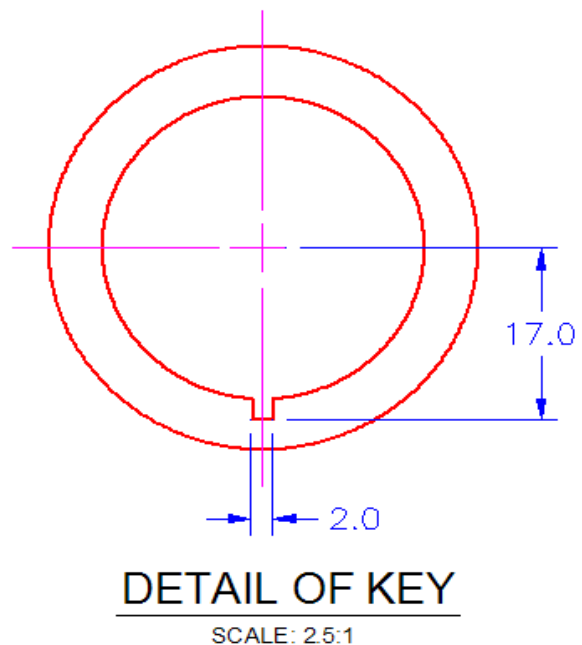
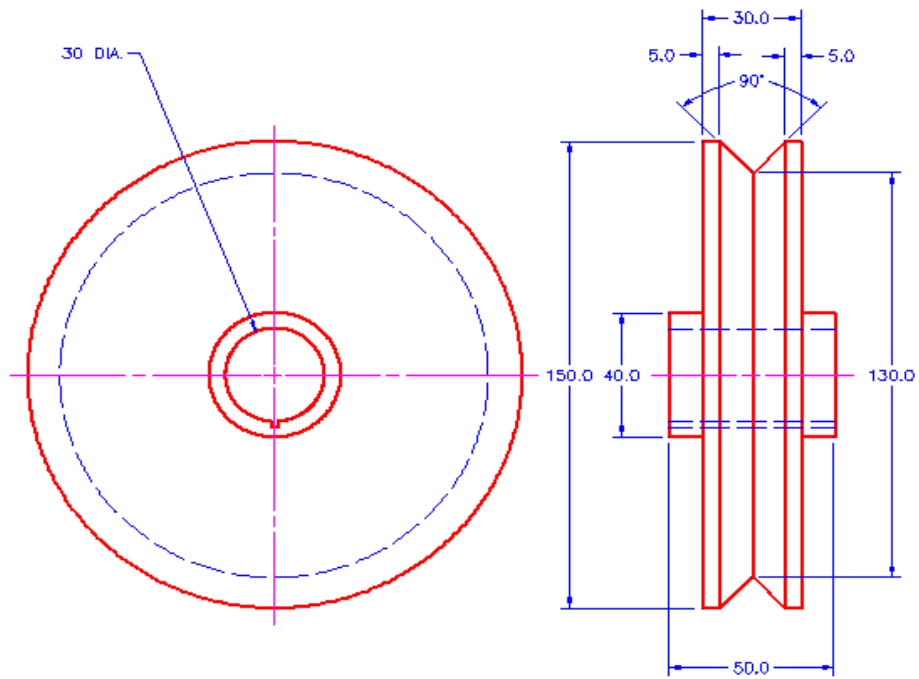


Figure Step 12

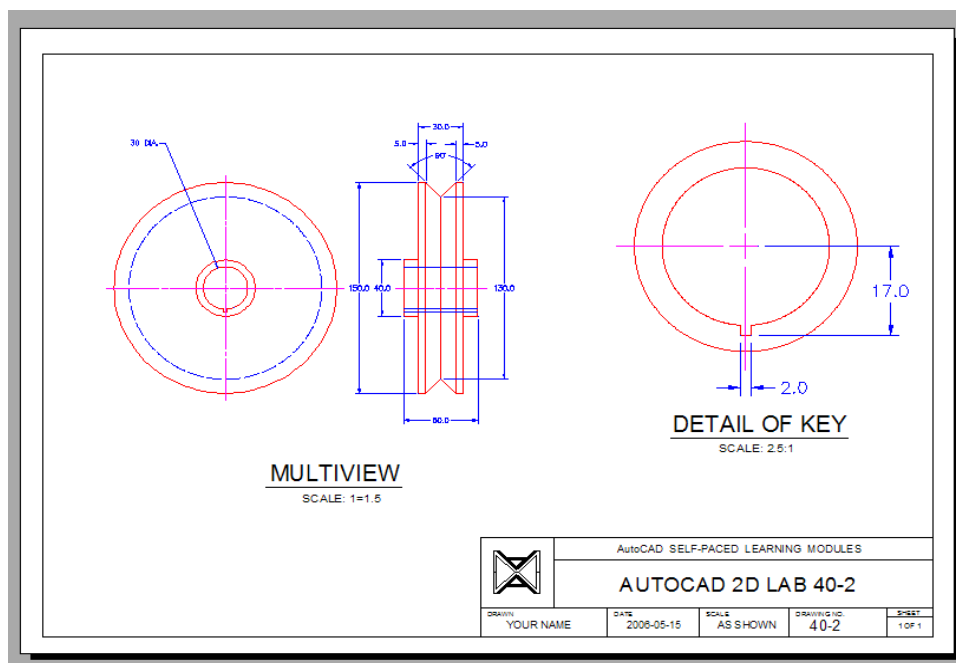
13. On layer Center, add the center lines in both views.
14. Create a dimensioning style named Module 40. Modify it to create the dimension in Step 15. You will have to make adjustments as you insert dimensions.
15. On layer Dimension, add the dimensions to both views. See the figures below. Before you do that, check to ensure that you are not inserting exploded dimensions. For 2002-2007, set the system variable DIMASSOC to 2. For 2000-2000i, set the system variable DIMASO to ON.
16. On layer Text, add the labels on each view as shown in the figures below.
17. Complete the titleblock.





MULTIVIEW

SCALE: 1=1.5



Completed Drawing