

DEPARTMENT OF MECHANICAL AND INDUSTRIAL ENGINEERING
NORTHEASTERN UNIVERSITY

CAPSULE PROGRAM
Funded by NSF grant #0833636



Tutorial 03
Engineering Drawings

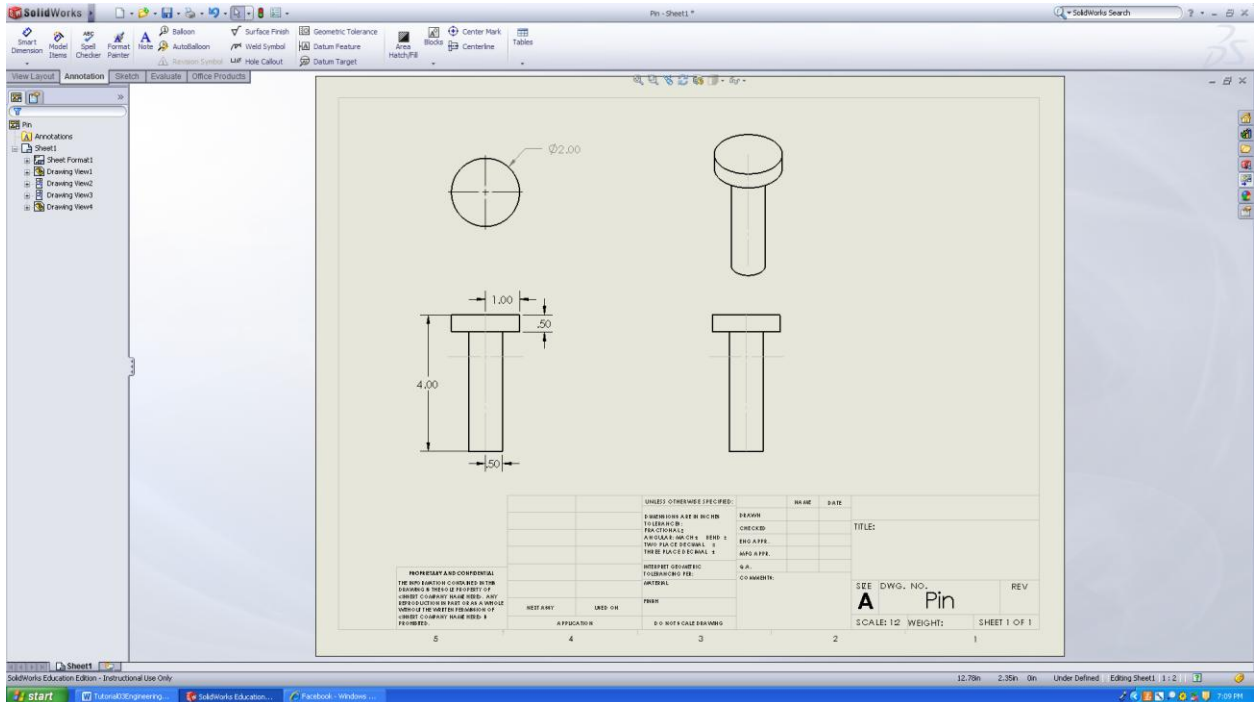
SolidWorks 2010
Copyright © 2010 Prof. Zeid

Drawing and Dimensioning

In this tutorial you create an engineering drawing of a part

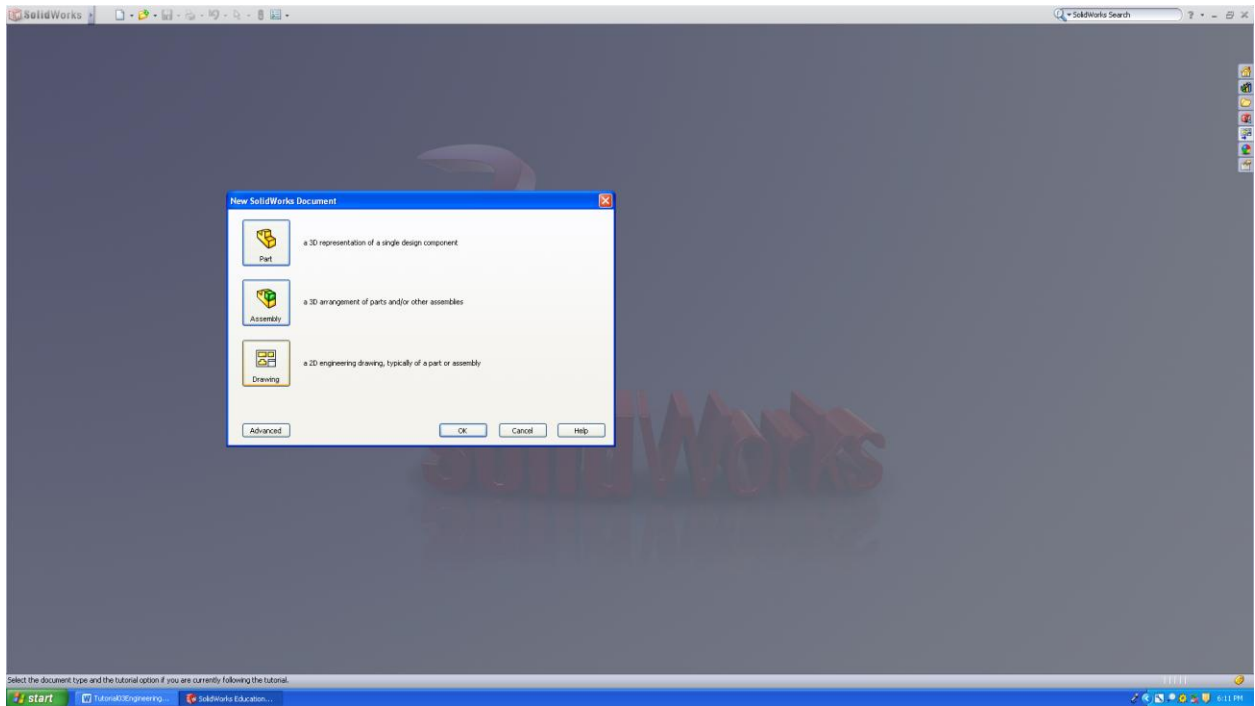
General planning strategy

At the end of this tutorial we shall have the drawing/drafting layout shown below:

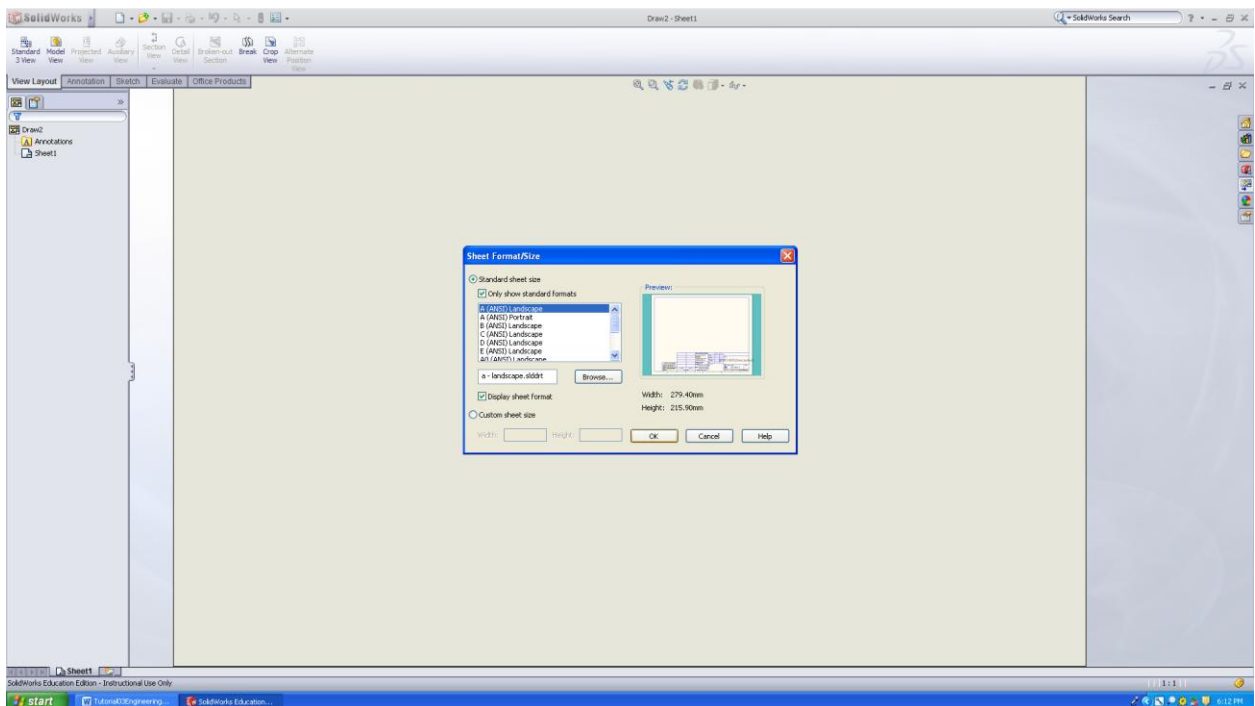


Step1

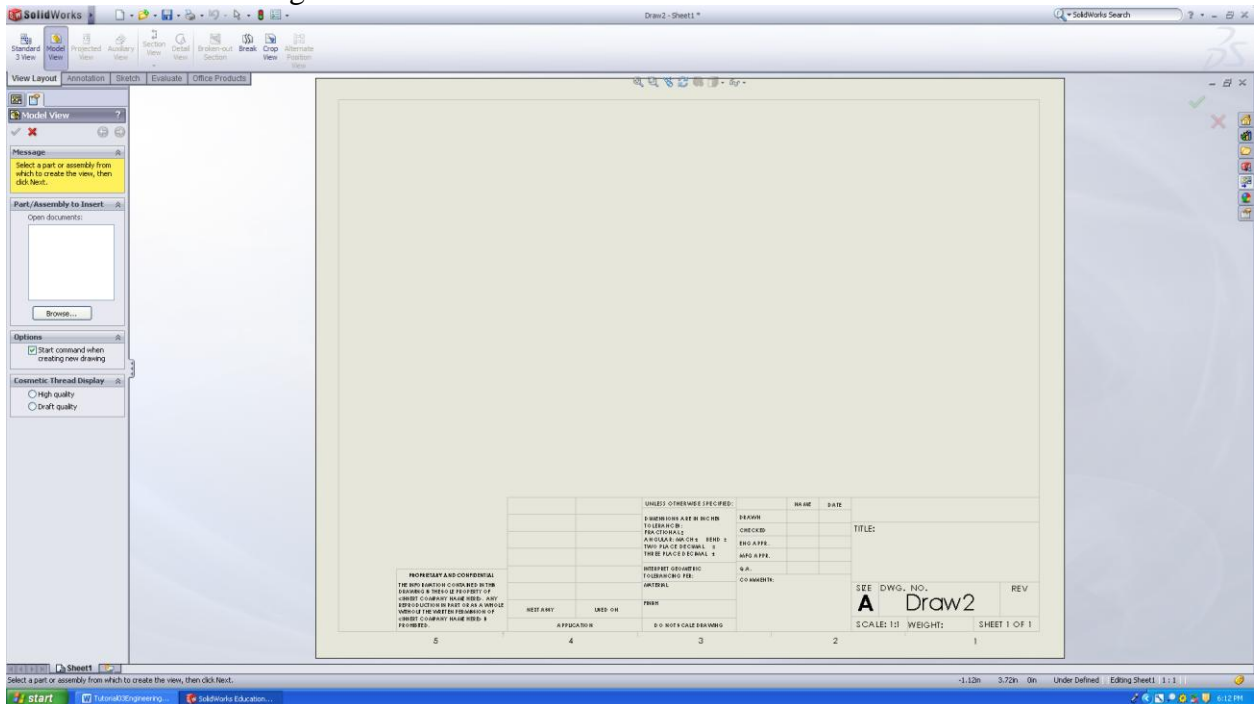
Go to **New→Drawing**.



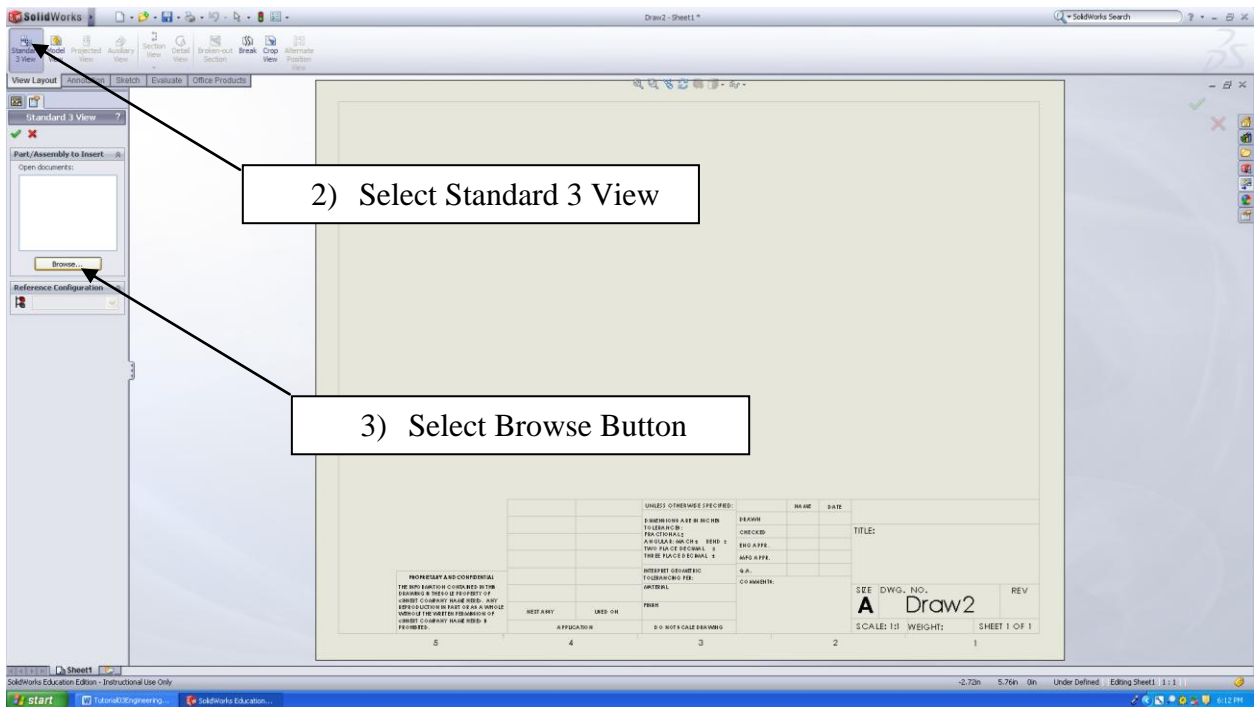
Select **A(ANSI)Landscape** and Select **OK**



Preview of the drawing screen.

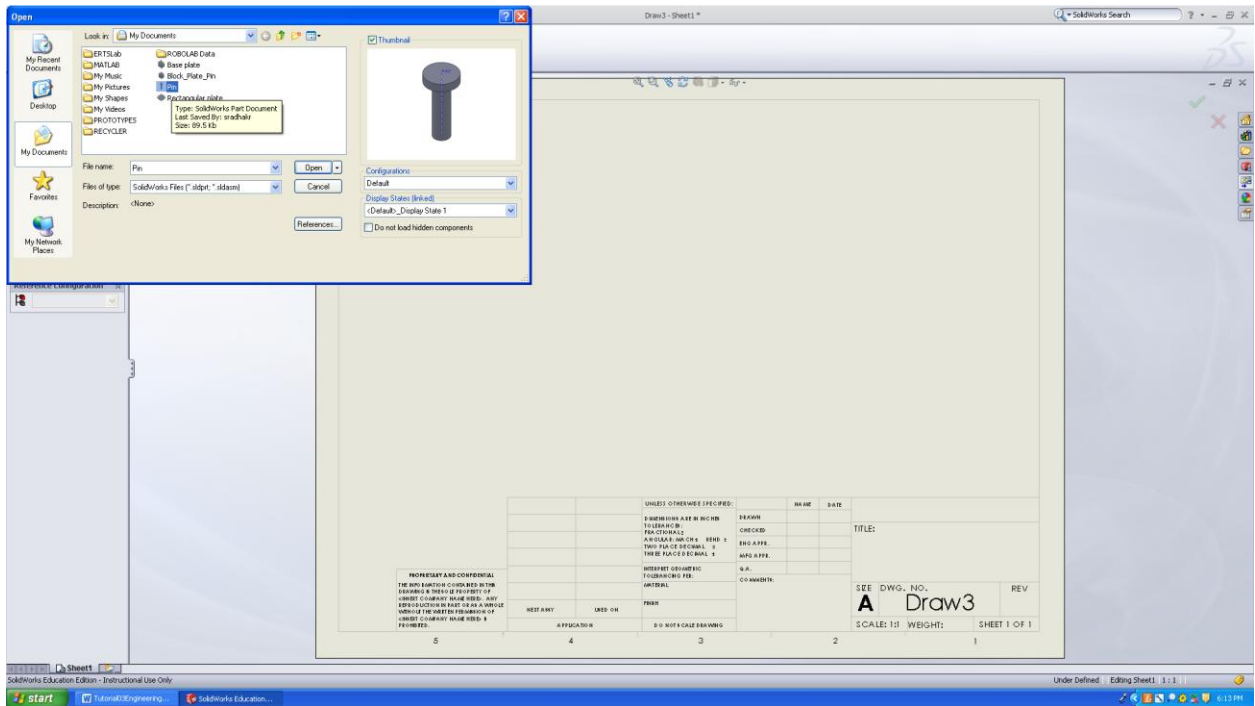


Step 2
Go to **Standard 3 View** and **Select Browse**.

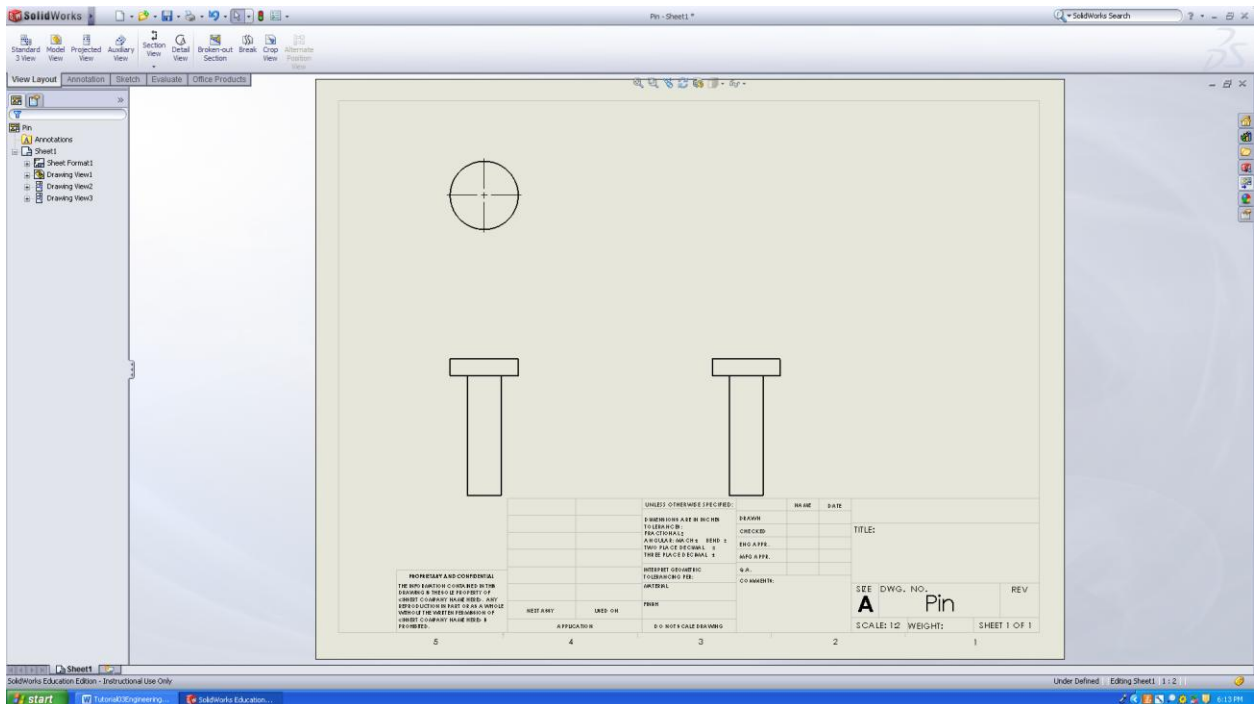


Step3

Select the part file named “pin” and select **open** button.



Preview of the pin model drawing.

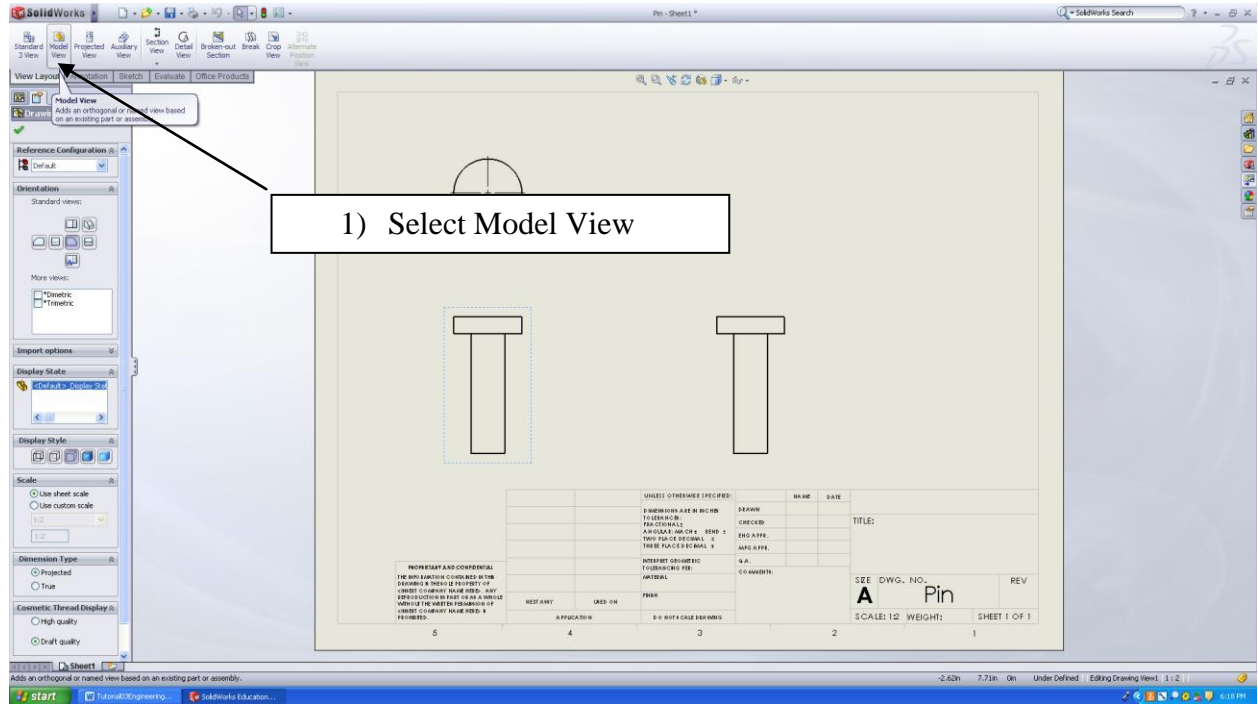


The screenshot displays the SolidWorks 2016 Engineering drawing environment. The main drawing area shows a top view of a pin with a circular cross-section at the top, divided into four quadrants by a crosshair. Below this, a side view of the pin is shown, with a dashed line indicating the cross-section. A small 'Drawing View' label is placed near the side view. The left sidebar contains various toolbars and panels, including 'Reference Configuration', 'Orientation', 'Import options', 'Display State', 'Display Style', 'Scale', 'Dimension Type', and 'Conformal Thermal Display'. The bottom status bar shows the drawing is on 'Sheet1' and 'Pin - Sheet1.rvt'. The title block at the bottom right contains the following information:

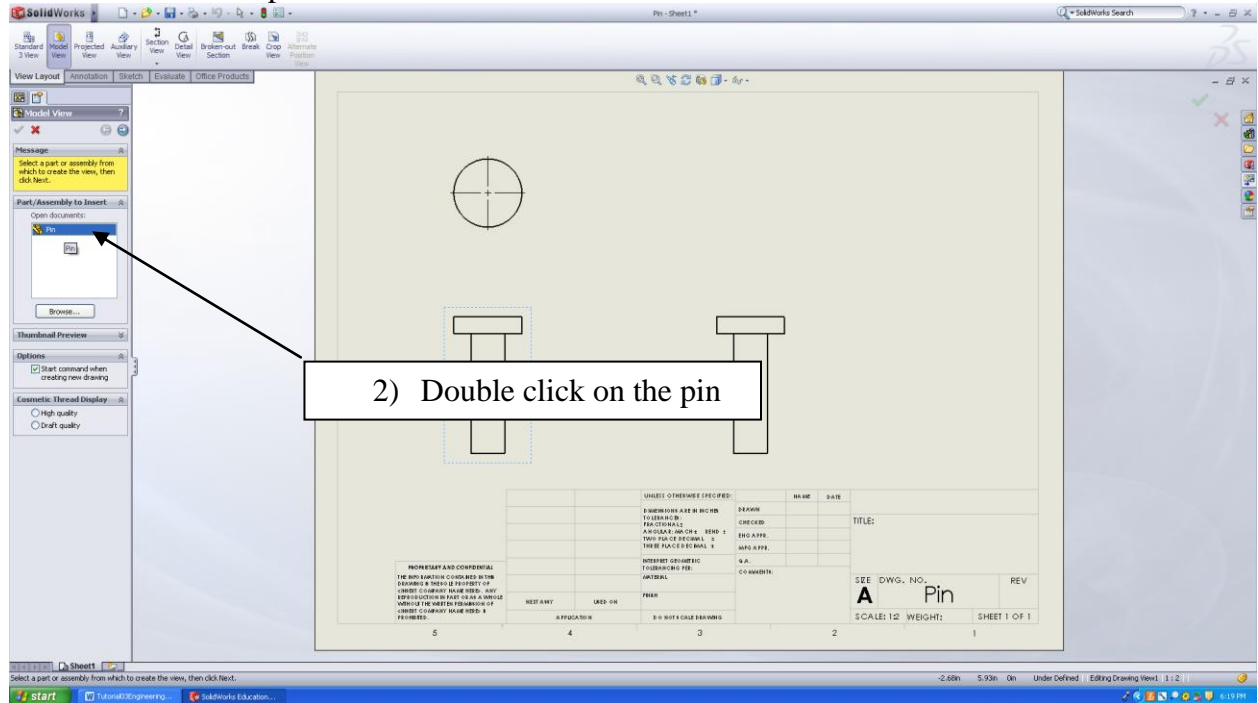
UNLESS OTHERWISE SPECIFIED:		NAME	DATE
1. DIMENSIONS ARE IN INCHES	DESIGN		
2. DECIMALS ARE TO BE SHOWN	CHECKED		
3. DIMENSIONS ARE TO BE SHOWN	APPROVED		
4. DIMENSIONS ARE TO BE SHOWN	DATE		
5. DIMENSIONS ARE TO BE SHOWN	DATE		
6. DIMENSIONS ARE TO BE SHOWN	DATE		
7. DIMENSIONS ARE TO BE SHOWN	DATE		
8. DIMENSIONS ARE TO BE SHOWN	DATE		
9. DIMENSIONS ARE TO BE SHOWN	DATE		
10. DIMENSIONS ARE TO BE SHOWN	DATE		
11. DIMENSIONS ARE TO BE SHOWN	DATE		
12. DIMENSIONS ARE TO BE SHOWN	DATE		
13. DIMENSIONS ARE TO BE SHOWN	DATE		
14. DIMENSIONS ARE TO BE SHOWN	DATE		
15. DIMENSIONS ARE TO BE SHOWN	DATE		
16. DIMENSIONS ARE TO BE SHOWN	DATE		
17. DIMENSIONS ARE TO BE SHOWN	DATE		
18. DIMENSIONS ARE TO BE SHOWN	DATE		
19. DIMENSIONS ARE TO BE SHOWN	DATE		
20. DIMENSIONS ARE TO BE SHOWN	DATE		
21. DIMENSIONS ARE TO BE SHOWN	DATE		
22. DIMENSIONS ARE TO BE SHOWN	DATE		
23. DIMENSIONS ARE TO BE SHOWN	DATE		
24. DIMENSIONS ARE TO BE SHOWN	DATE		
25. DIMENSIONS ARE TO BE SHOWN	DATE		
26. DIMENSIONS ARE TO BE SHOWN	DATE		
27. DIMENSIONS ARE TO BE SHOWN	DATE		
28. DIMENSIONS ARE TO BE SHOWN	DATE		
29. DIMENSIONS ARE TO BE SHOWN	DATE		
30. DIMENSIONS ARE TO BE SHOWN	DATE		
31. DIMENSIONS ARE TO BE SHOWN	DATE		
32. DIMENSIONS ARE TO BE SHOWN	DATE		
33. DIMENSIONS ARE TO BE SHOWN	DATE		
34. DIMENSIONS ARE TO BE SHOWN	DATE		
35. DIMENSIONS ARE TO BE SHOWN	DATE		
36. DIMENSIONS ARE TO BE SHOWN	DATE		
37. DIMENSIONS ARE TO BE SHOWN	DATE		
38. DIMENSIONS ARE TO BE SHOWN	DATE		
39. DIMENSIONS ARE TO BE SHOWN	DATE		
40. DIMENSIONS ARE TO BE SHOWN	DATE		
41. DIMENSIONS ARE TO BE SHOWN	DATE		
42. DIMENSIONS ARE TO BE SHOWN	DATE		
43. DIMENSIONS ARE TO BE SHOWN	DATE		
44. DIMENSIONS ARE TO BE SHOWN	DATE		
45. DIMENSIONS ARE TO BE SHOWN	DATE		
46. DIMENSIONS ARE TO BE SHOWN	DATE		
47. DIMENSIONS ARE TO BE SHOWN	DATE		
48. DIMENSIONS ARE TO BE SHOWN	DATE		
49. DIMENSIONS ARE TO BE SHOWN	DATE		
50. DIMENSIONS ARE TO BE SHOWN	DATE		
51. DIMENSIONS ARE TO BE SHOWN	DATE		
52. DIMENSIONS ARE TO BE SHOWN	DATE		
53. DIMENSIONS ARE TO BE SHOWN	DATE		
54. DIMENSIONS ARE TO BE SHOWN	DATE		
55. DIMENSIONS ARE TO BE SHOWN	DATE		
56. DIMENSIONS ARE TO BE SHOWN	DATE		
57. DIMENSIONS ARE TO BE SHOWN	DATE		
58. DIMENSIONS ARE TO BE SHOWN	DATE		
59. DIMENSIONS ARE TO BE SHOWN	DATE		
60. DIMENSIONS ARE TO BE SHOWN	DATE		
61. DIMENSIONS ARE TO BE SHOWN	DATE		
62. DIMENSIONS ARE TO BE SHOWN	DATE		
63. DIMENSIONS ARE TO BE SHOWN	DATE		
64. DIMENSIONS ARE TO BE SHOWN	DATE		
65. DIMENSIONS ARE TO BE SHOWN	DATE		
66. DIMENSIONS ARE TO BE SHOWN	DATE		
67. DIMENSIONS ARE TO BE SHOWN	DATE		
68. DIMENSIONS ARE TO BE SHOWN	DATE		
69. DIMENSIONS ARE TO BE SHOWN	DATE		
70. DIMENSIONS ARE TO BE SHOWN	DATE		
71. DIMENSIONS ARE TO BE SHOWN	DATE		
72. DIMENSIONS ARE TO BE SHOWN	DATE		
73. DIMENSIONS ARE TO BE SHOWN	DATE		
74. DIMENSIONS ARE TO BE SHOWN	DATE		
75. DIMENSIONS ARE TO BE SHOWN	DATE		
76. DIMENSIONS ARE TO BE SHOWN	DATE		
77. DIMENSIONS ARE TO BE SHOWN	DATE		
78. DIMENSIONS ARE TO BE SHOWN	DATE		
79. DIMENSIONS ARE TO BE SHOWN	DATE		
80. DIMENSIONS ARE TO BE SHOWN	DATE		
81. DIMENSIONS ARE TO BE SHOWN	DATE		
82. DIMENSIONS ARE TO BE SHOWN	DATE		
83. DIMENSIONS ARE TO BE SHOWN	DATE		
84. DIMENSIONS ARE TO BE SHOWN	DATE		
85. DIMENSIONS ARE TO BE SHOWN	DATE		
86. DIMENSIONS ARE TO BE SHOWN	DATE		
87. DIMENSIONS ARE TO BE SHOWN	DATE		
88. DIMENSIONS ARE TO BE SHOWN	DATE		
89. DIMENSIONS ARE TO BE SHOWN	DATE		
90. DIMENSIONS ARE TO BE SHOWN	DATE		
91. DIMENSIONS ARE TO BE SHOWN	DATE		
92. DIMENSIONS ARE TO BE SHOWN	DATE		
93. DIMENSIONS ARE TO BE SHOWN	DATE		
94. DIMENSIONS ARE TO BE SHOWN	DATE		
95. DIMENSIONS ARE TO BE SHOWN	DATE		
96. DIMENSIONS ARE TO BE SHOWN	DATE		
97. DIMENSIONS ARE TO BE			

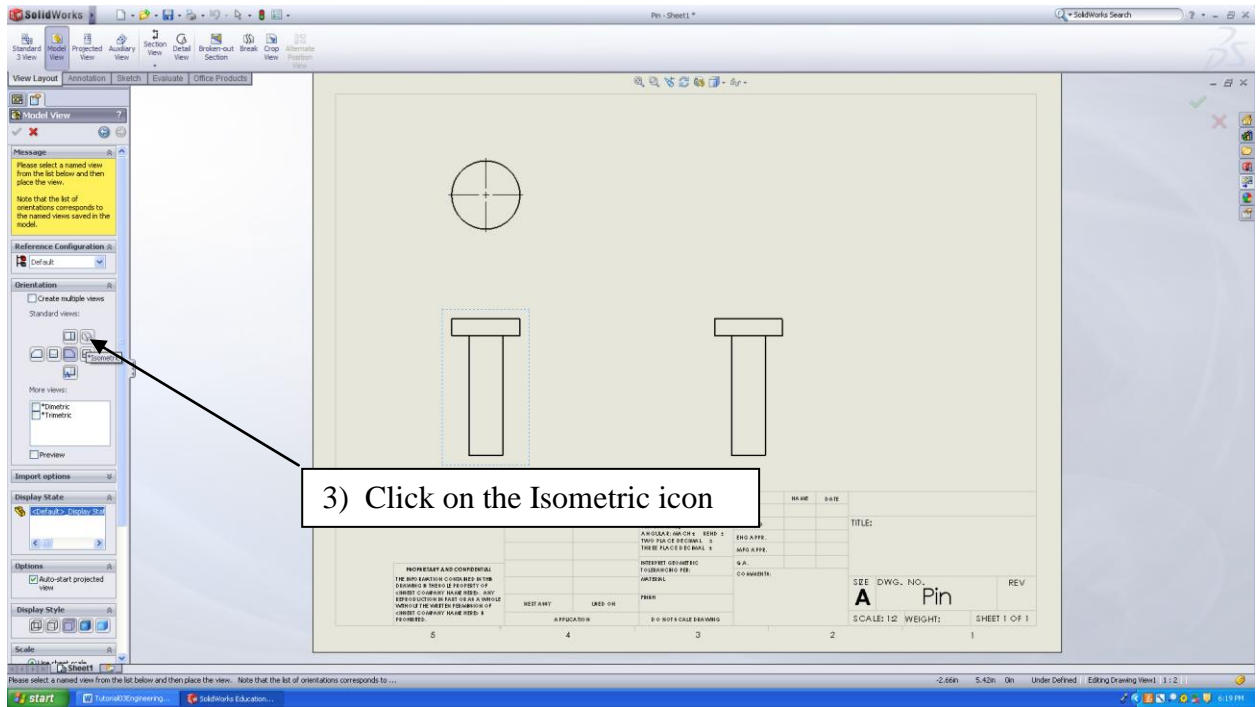
Step 4

Select Model View

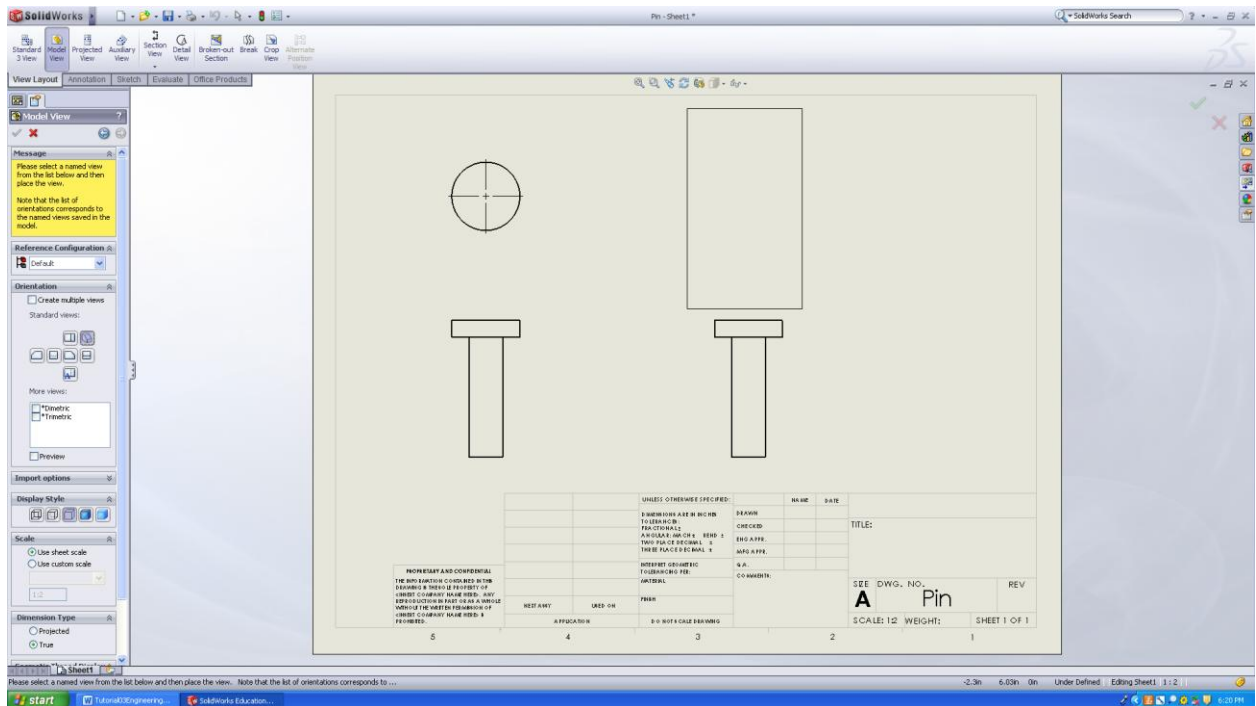


Double click on the pin

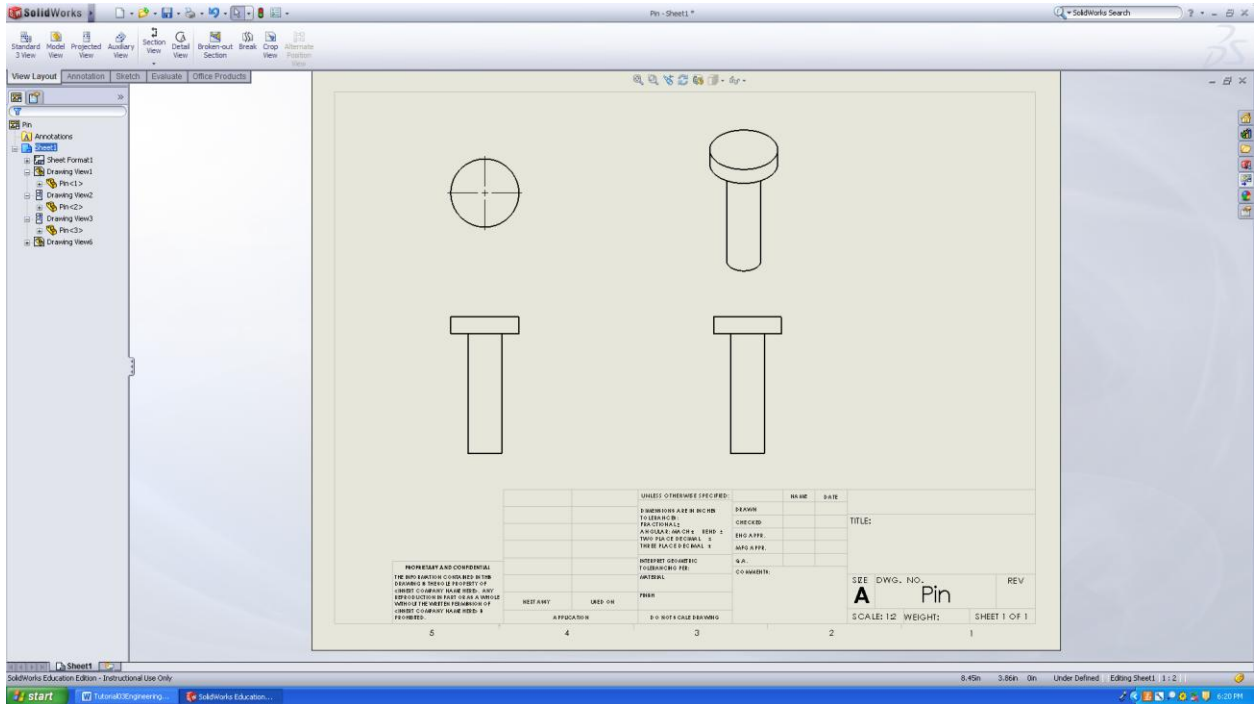




Once you selected the Isometric icon, a box will follow your mouse pointer. Click on the drawing area to fix the box.

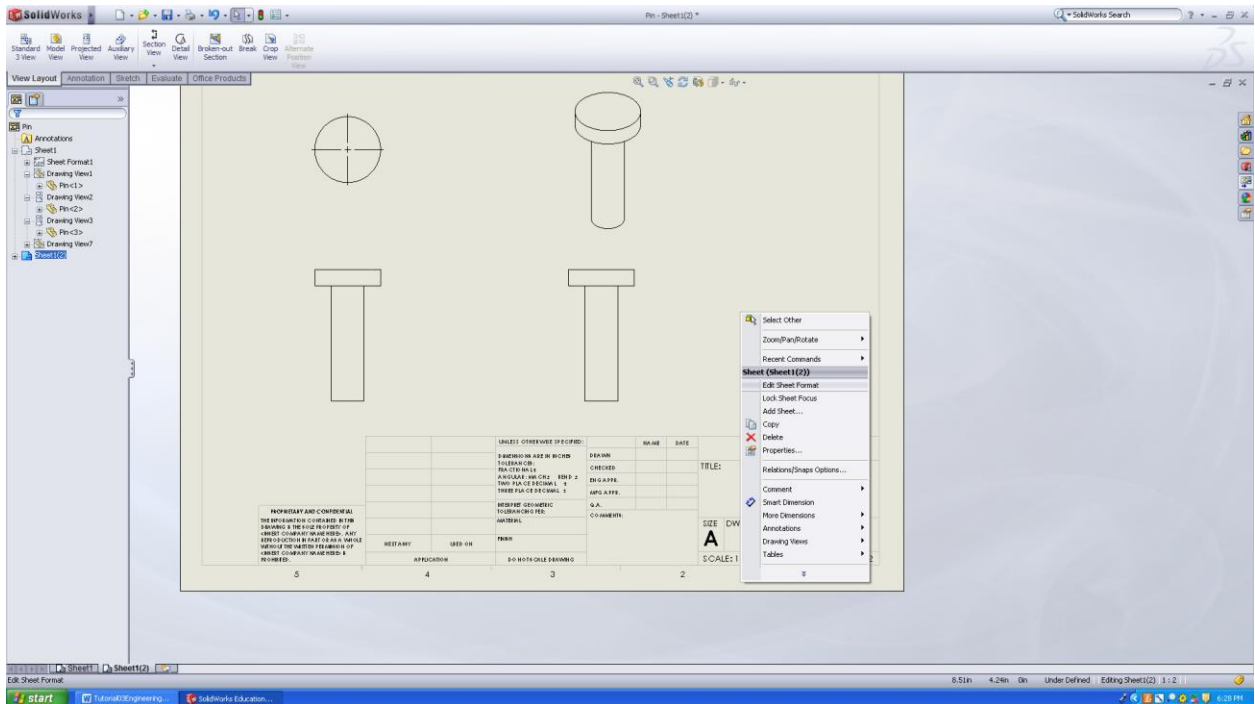


Preview of the Isometric Model.

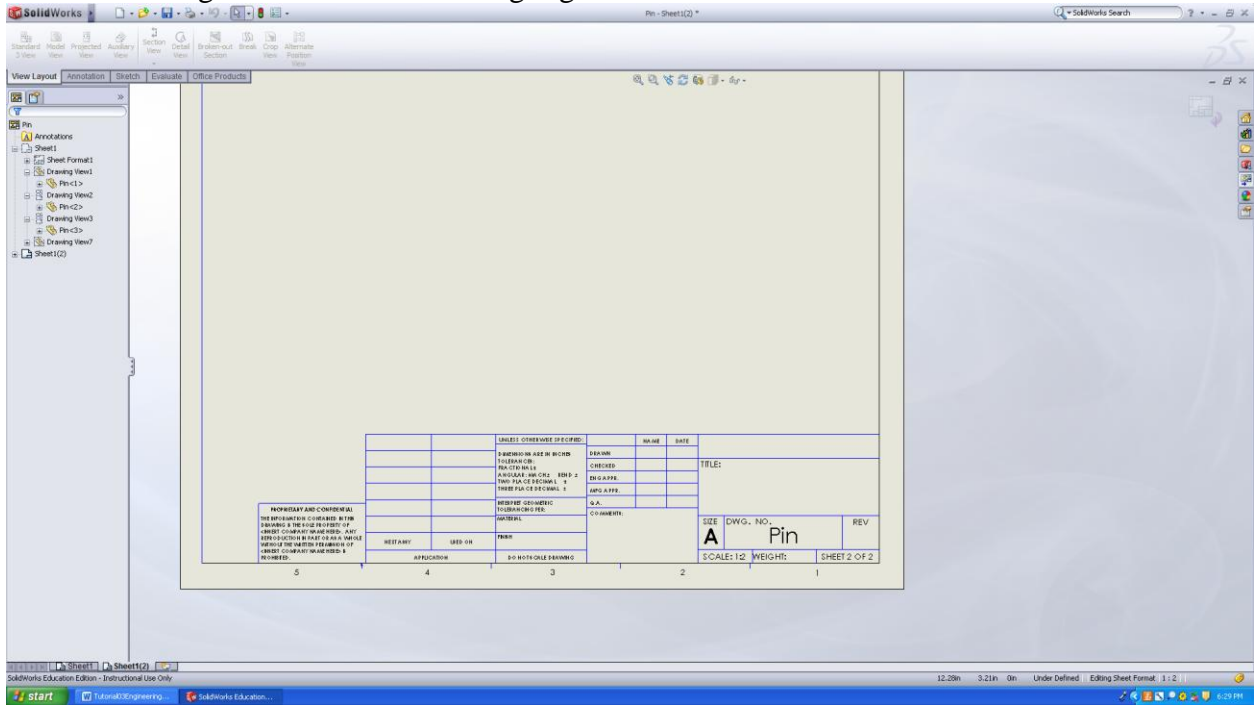


Step 5

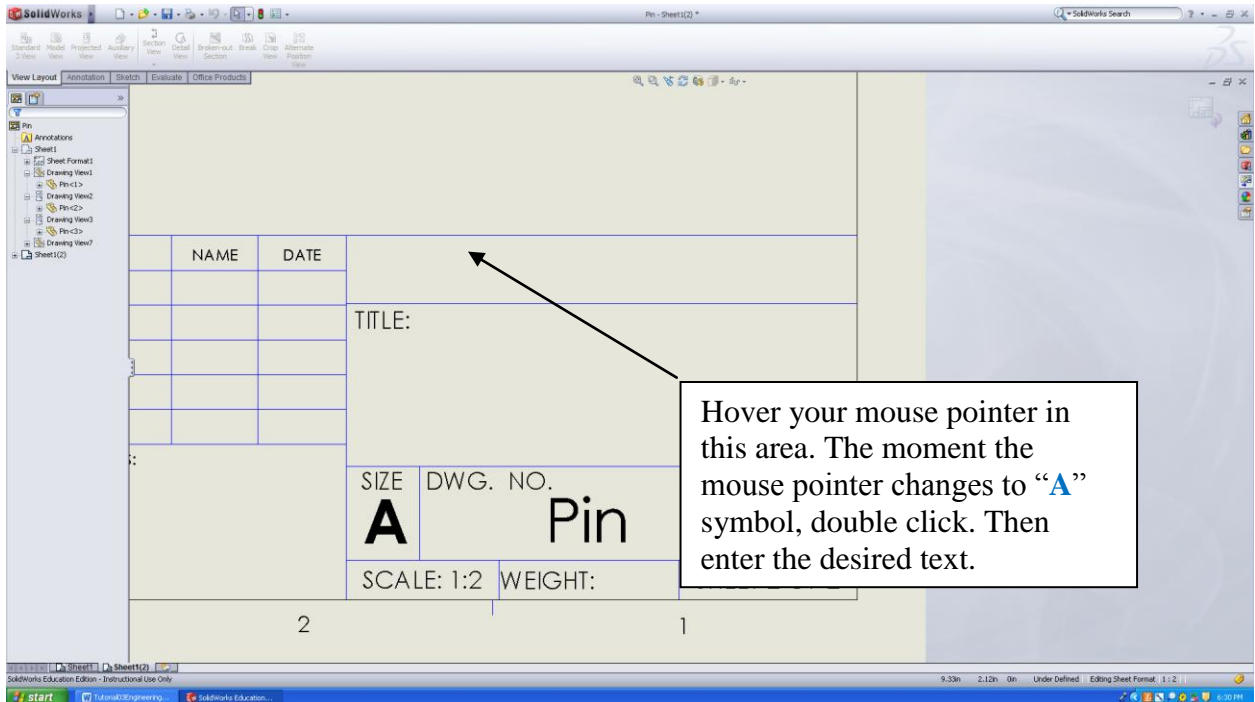
Right click on the drawing area and select **Edit Sheet Format**.



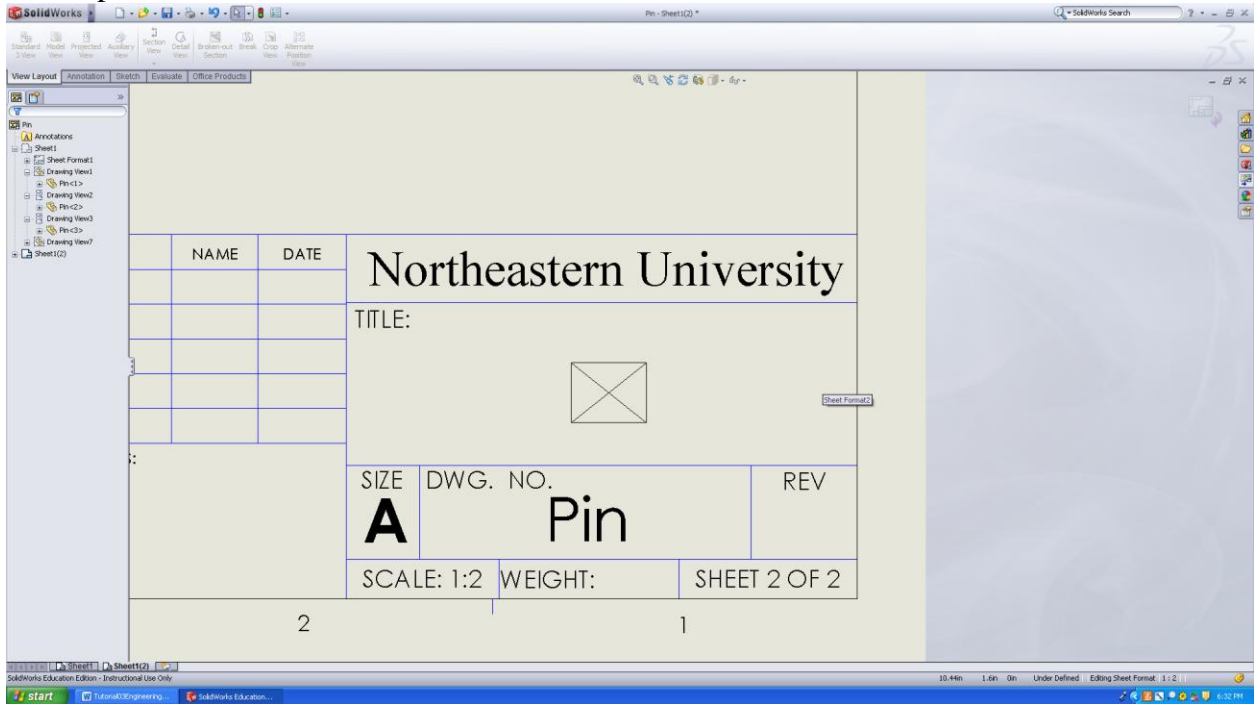
The sheet area gets selected which is highlighted with **Blue** color.



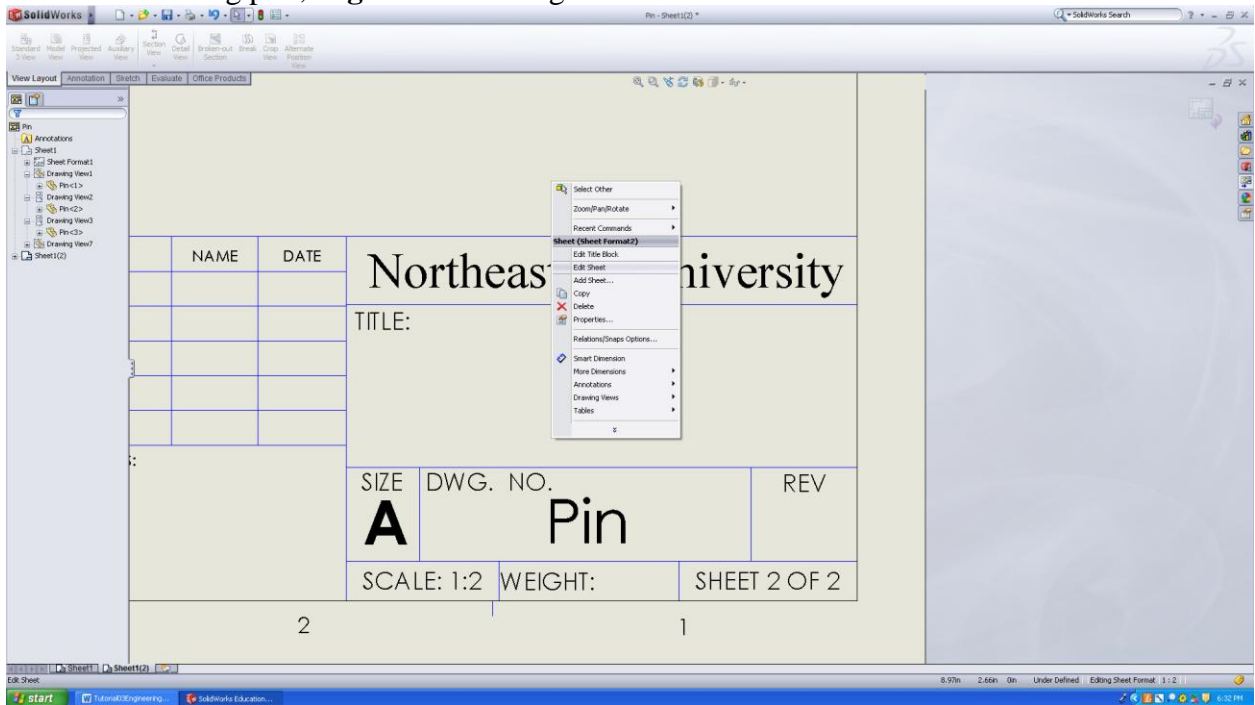
Zoom to the Title Block area.



Follow the same procedure to enter text value in different text boxes. Sometimes the text gets outside the boxes. They can be made to fit the boxes by clicking and dragging the mouse pointers on small blue boxes that surround the text box.

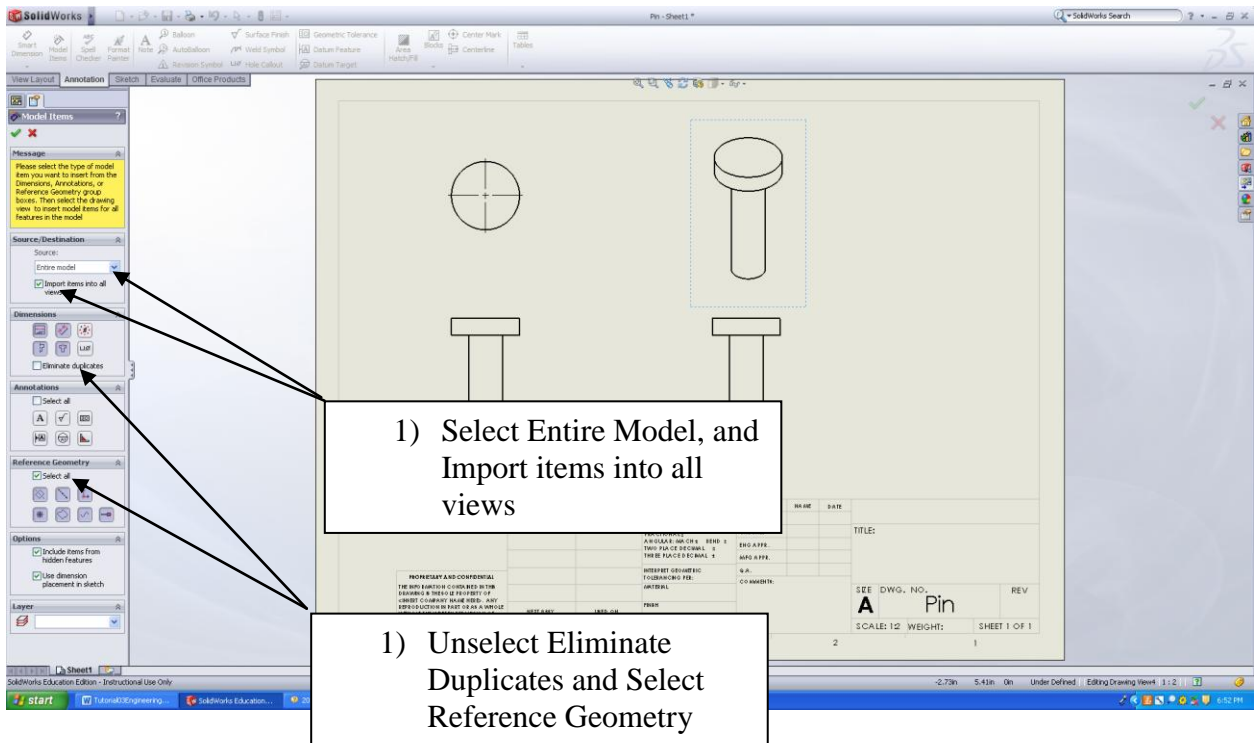
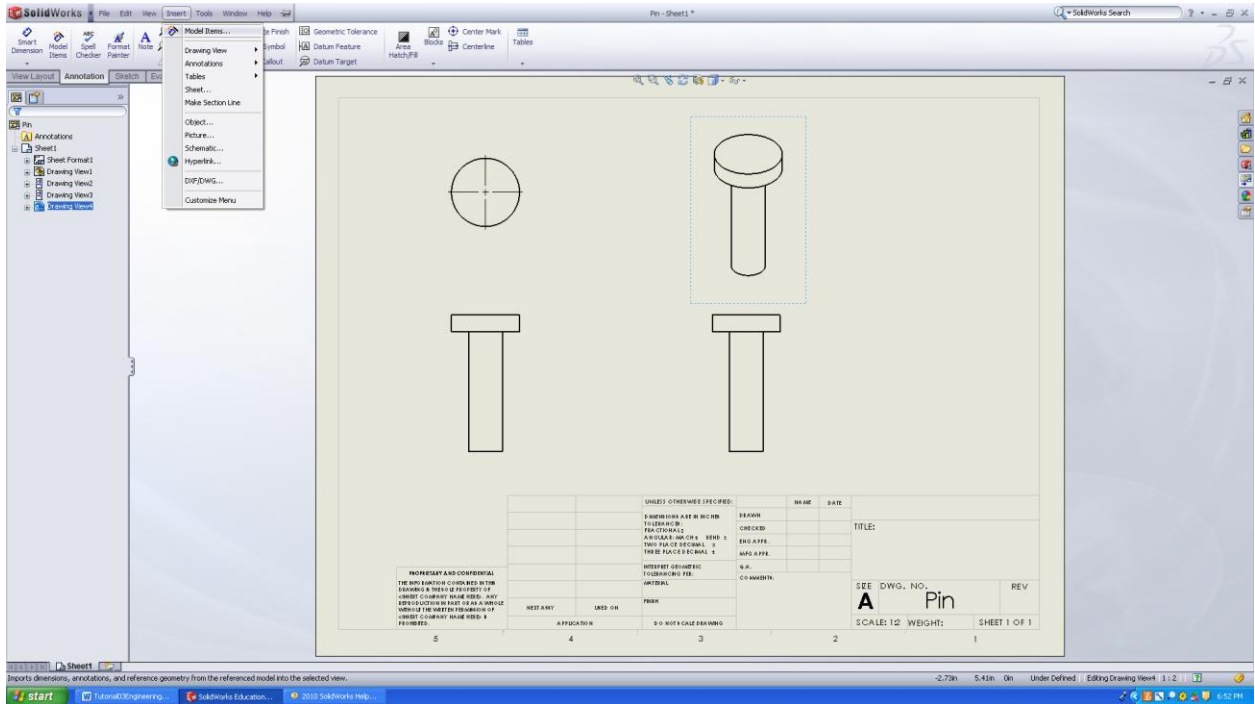


To exit the editing part, **Right Click** and again select **Edit Sheet**.

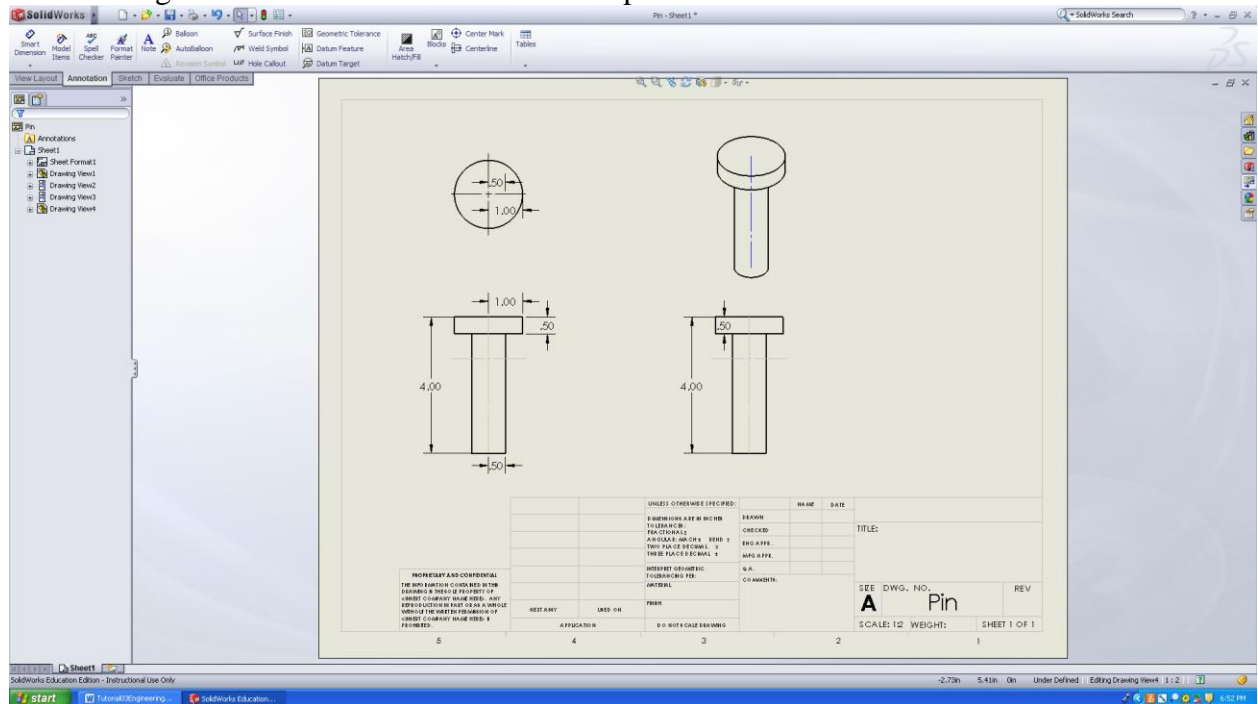


Step 6

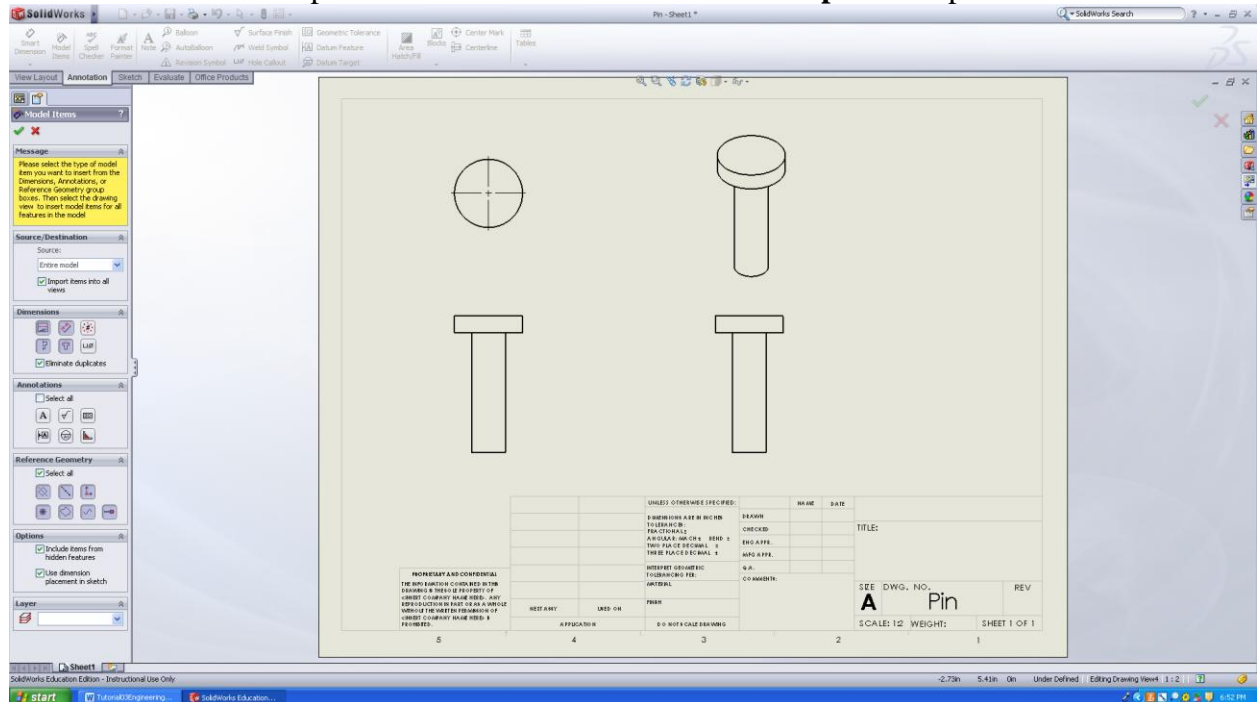
In order to dimension go to **Insert→Model Items**.



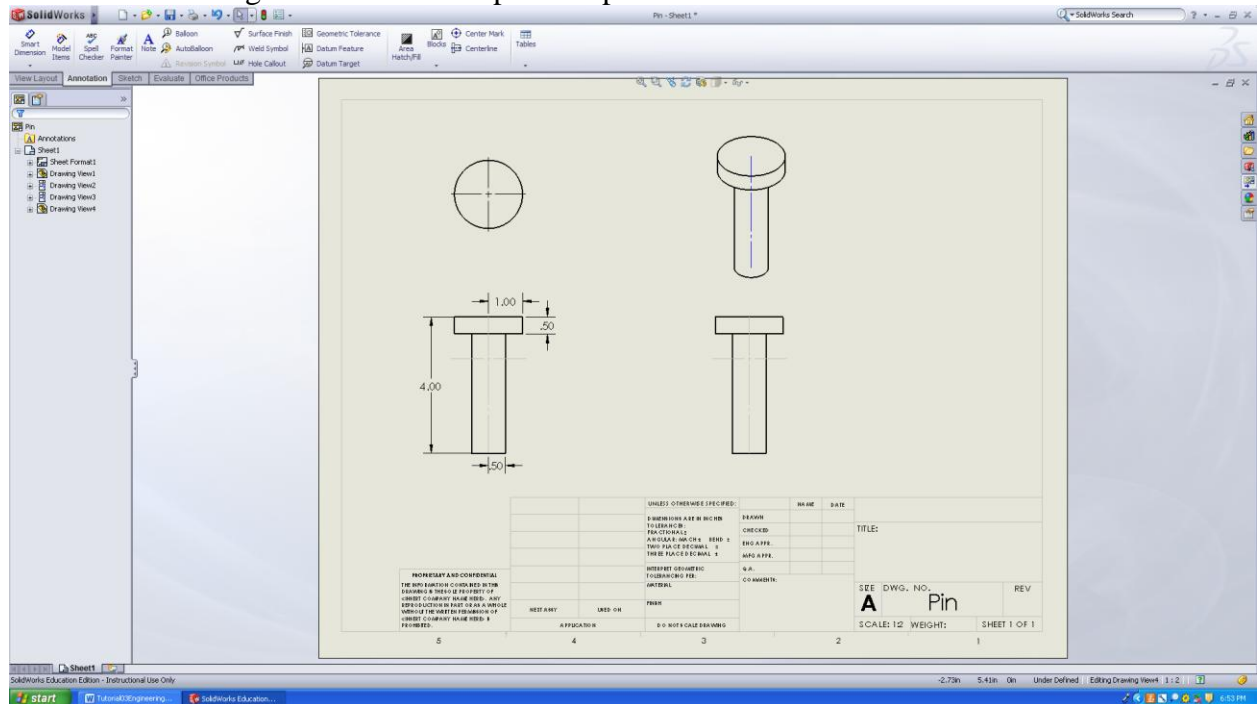
The drawings are dimensioned. But there are duplicate dimensions.



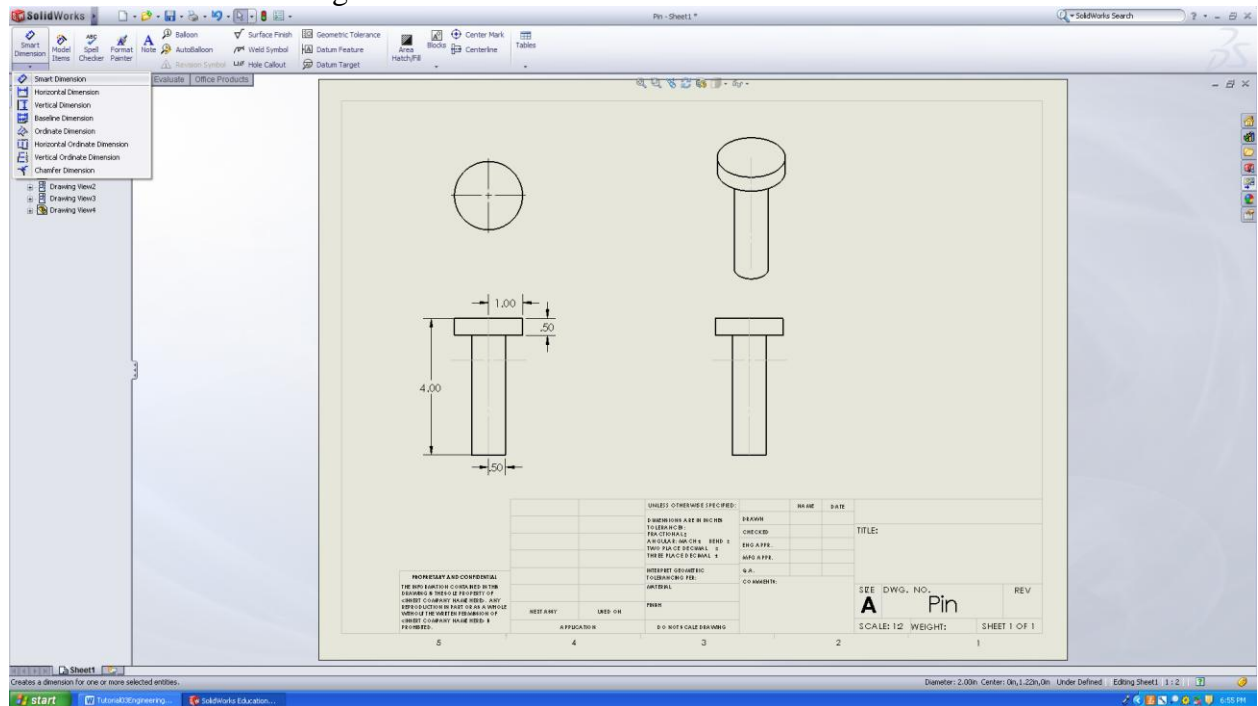
In order to eliminate duplicate dimensions select **Eliminate Duplicates** option.



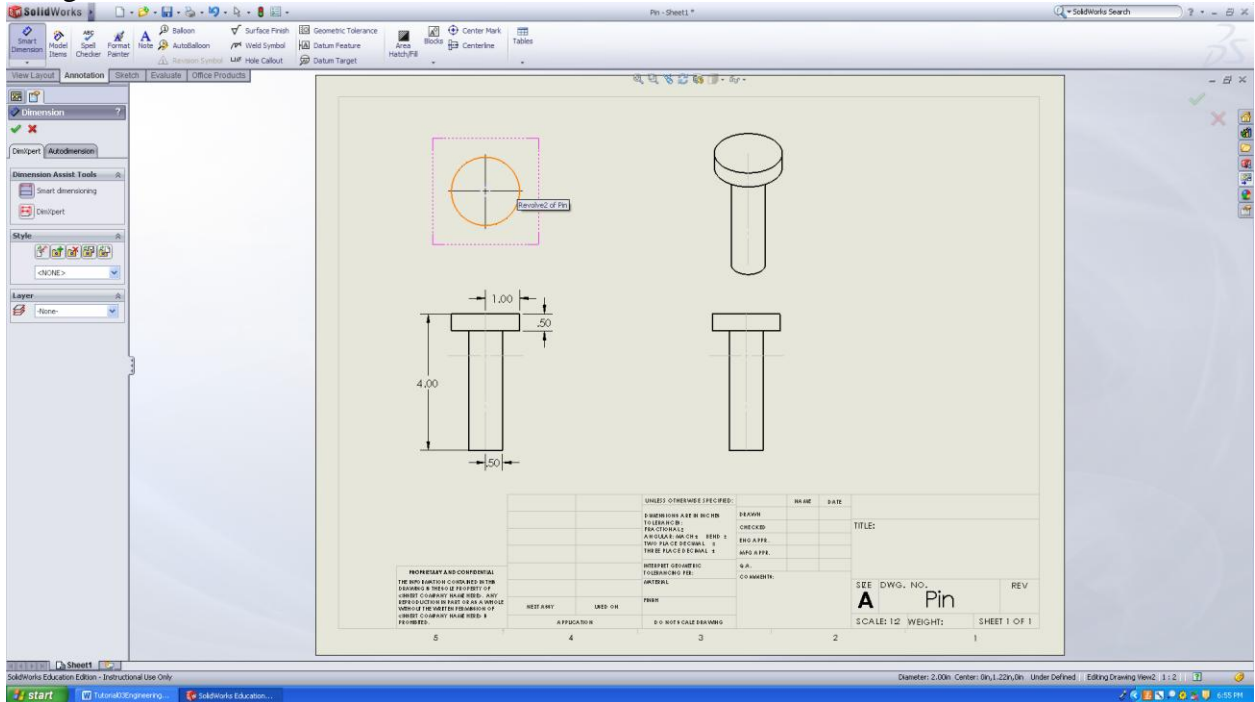
Preview of drawing with eliminate duplicate option selected.



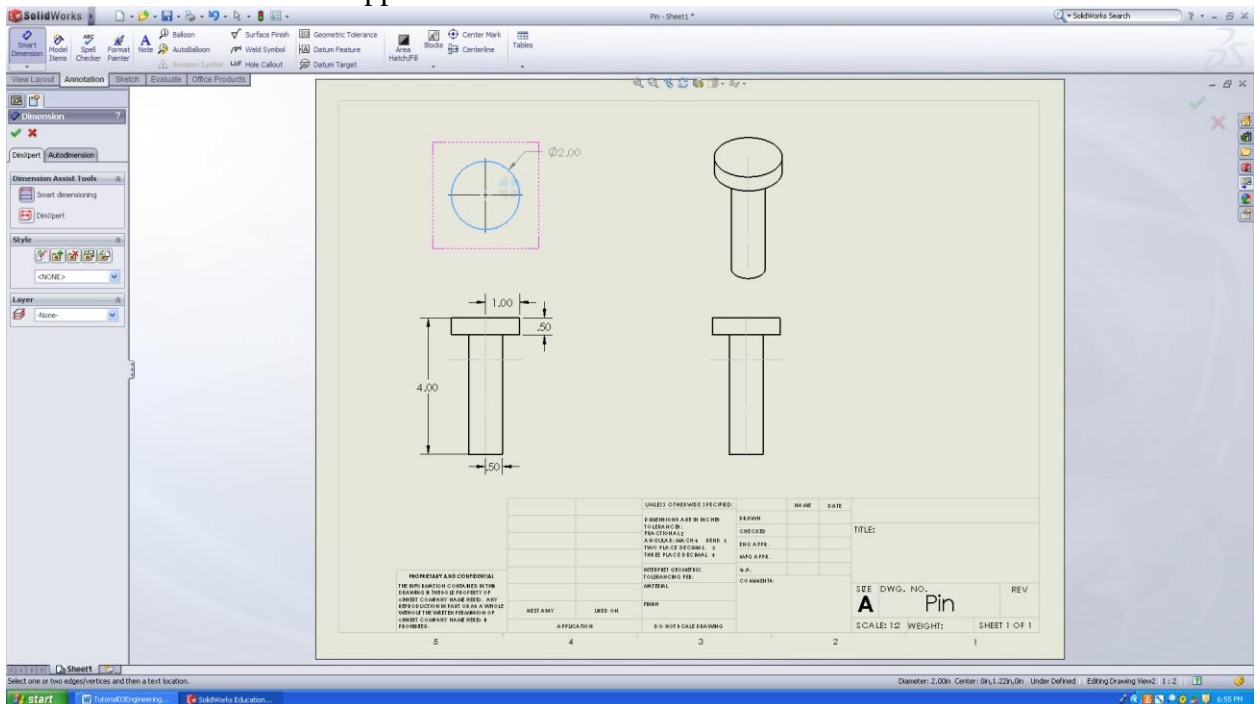
To add extra dimensions go to smart dimension and click on smart dimension.



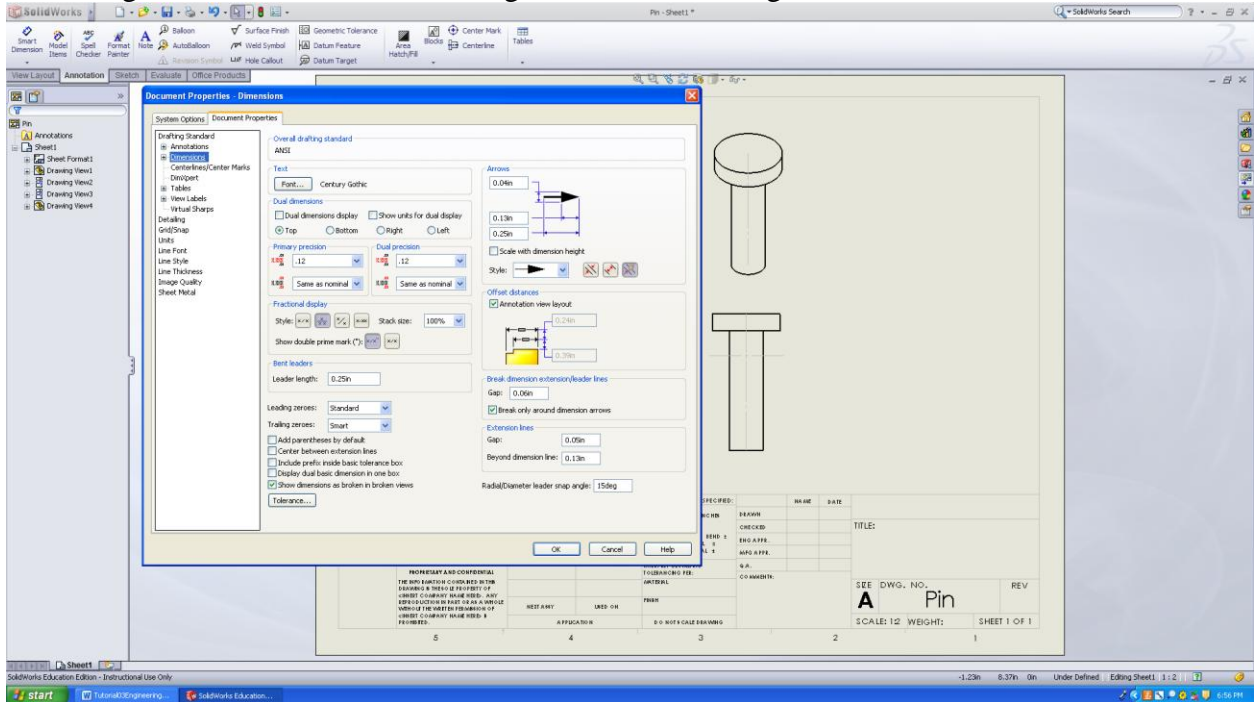
Hover mouse pointer over the desired geometry. The color of that geometry will turn orange.



Click on the geometry and drag outside the figure to get the desired dimension. You may dimension entire model using smart dimension. But it is more time consuming that the **Model Item→Dimension** approach.



You can go to **Tools→options→Document Properties Tab→Dimensions** and change the settings of the dimensions according to the dimensioning standards.



Step 7

It is important that you save the file as you shall be using it in other tutorials. In the **Main** window go to **File** and click on **Save As**, select an appropriate file name and click **OK**.

Class Hands-on

Create the 3 standard views and an isometric view of the Support Bracket as shown in the figure below.

