Alibre Design - My Tutorial Exercises - Bowl-1

Part Tutorials: <u>Exercise 1: Bowl-1</u>

In this Exercise, In sketch mode, we will first outline the Bowl with straight lines. Then we will use the Revolve Feature to create the Bowl, and then refine the bowls edges by editing the sketch using 2D Fillet.

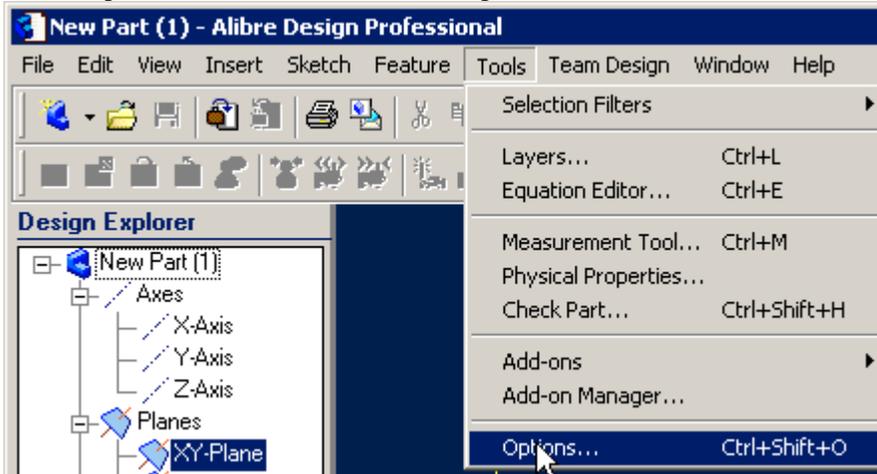<u>First Step - the Basic Bowl-1 Revolve Outline (sketch).</u>

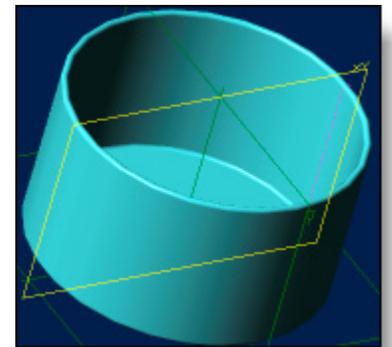From the Alibre Design Home Window, Open a New Part Workspace.
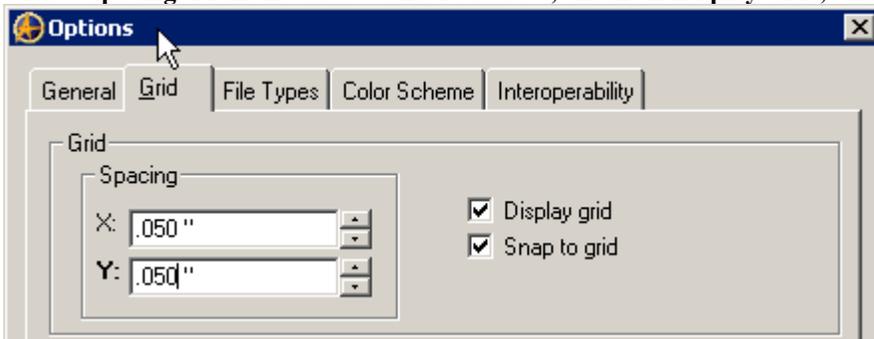
[Default Name: New Part (1)]

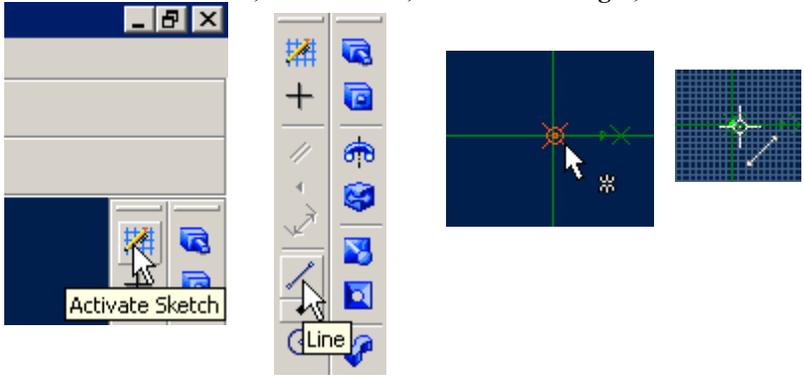From Top Text Menu - Select - Tools: > Options: >

(The Finished Bowl)

Grid > Spacing: Make X: 0.050 " and Y: 0.050 ", check off Display Grid, and Snap to Grid.
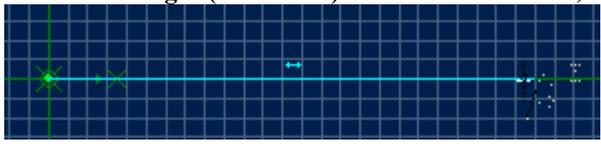
Click - OK.

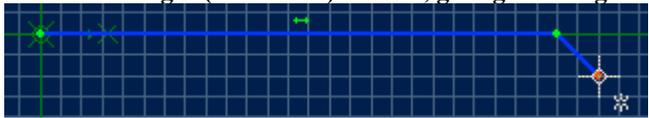**Activate Sketch Mode, Select - Line, Click at the Origin,**

Move to the right (Positive X) 1.250" Double Click, Click on Zoom to Fit;
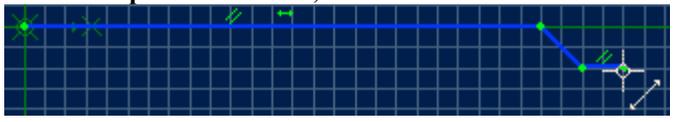

At the right end of this line - click on the end point, and drag a line down (Negative Y), 0.100" (2 grid Squares)

Then to the right (Positive X) 0.100 ", giving a 45-degree line, Double Click.

At the end point of this line, click to continue the line - moving right 2 grid squares, (0.100"), click.

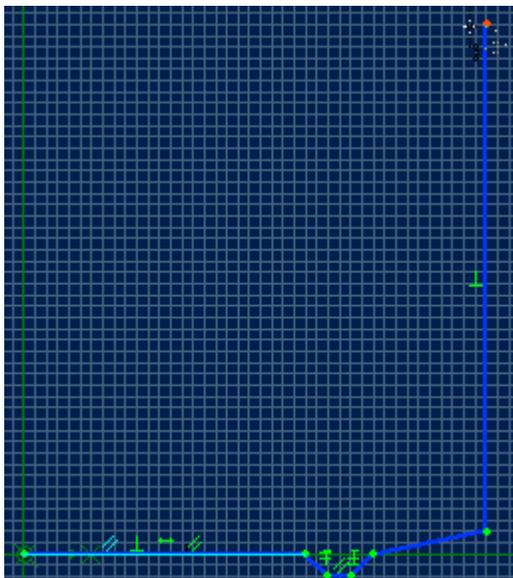**Follow this with another 45-degree line up 0.100" and to the right 0.100", Click.**

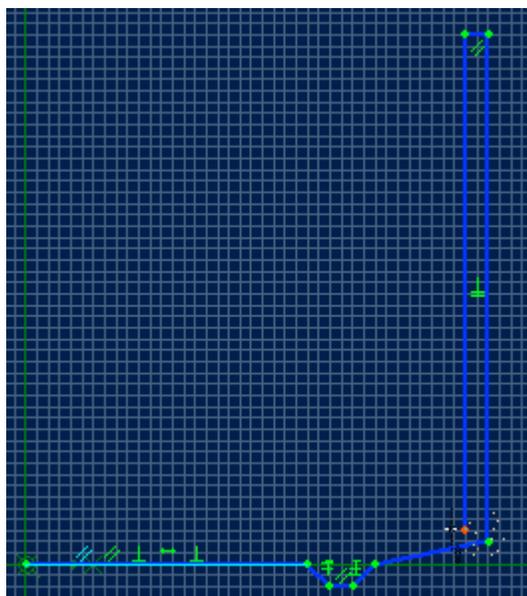**Now move right 0.500" and up 0.100", Double Click.**

Again - Click on Zoom to Fit, then Zoom out to give some more vertical working room.
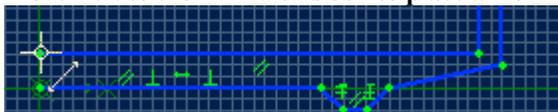
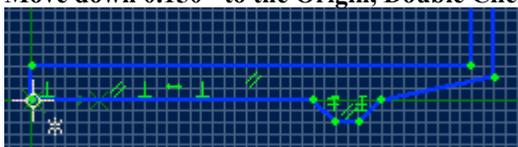**Click on the end of the last line, and drag a vertical line +2.250", Click.**

Move left 0.100", click; Move down 2.200", Click;

Move Left to the 'Y' Axis 1.950" to place a Horizontal line, Click;
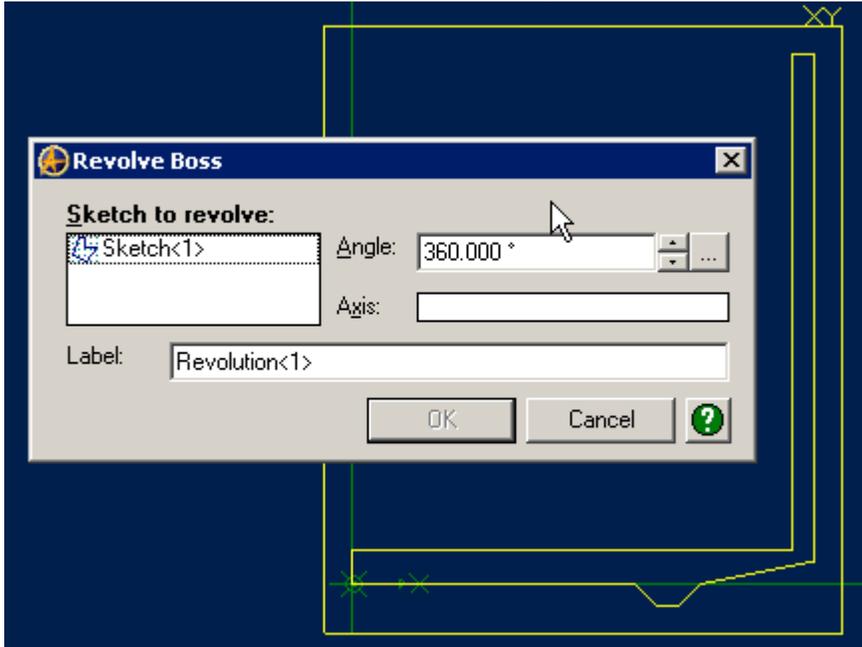

Move down 0.150" to the Origin, Double Click.

This has completed the basic Bowl-1 Revolve Outline (sketch).

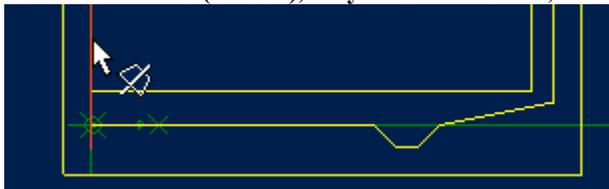## Next step will be to proceed with the Revolve Feature:
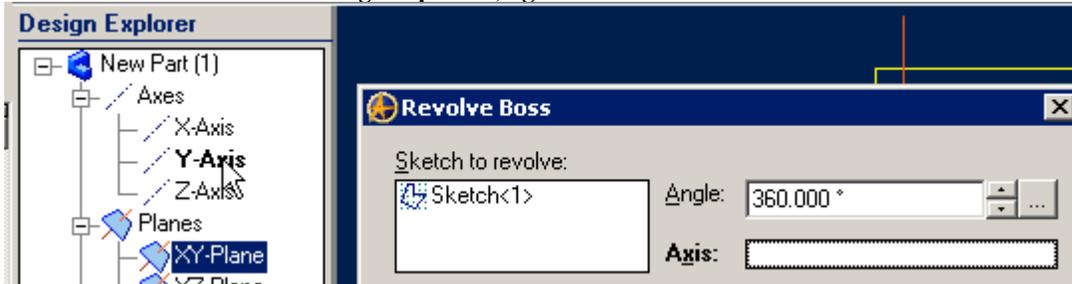
Select Revolve Boss,

It should already have defaulted to show Sketch<1> as the Sketch to Revolve, and defaults to Angle: 360.000. It will also have a defaulted Label: Revolution<1>, which can be left as is for now.
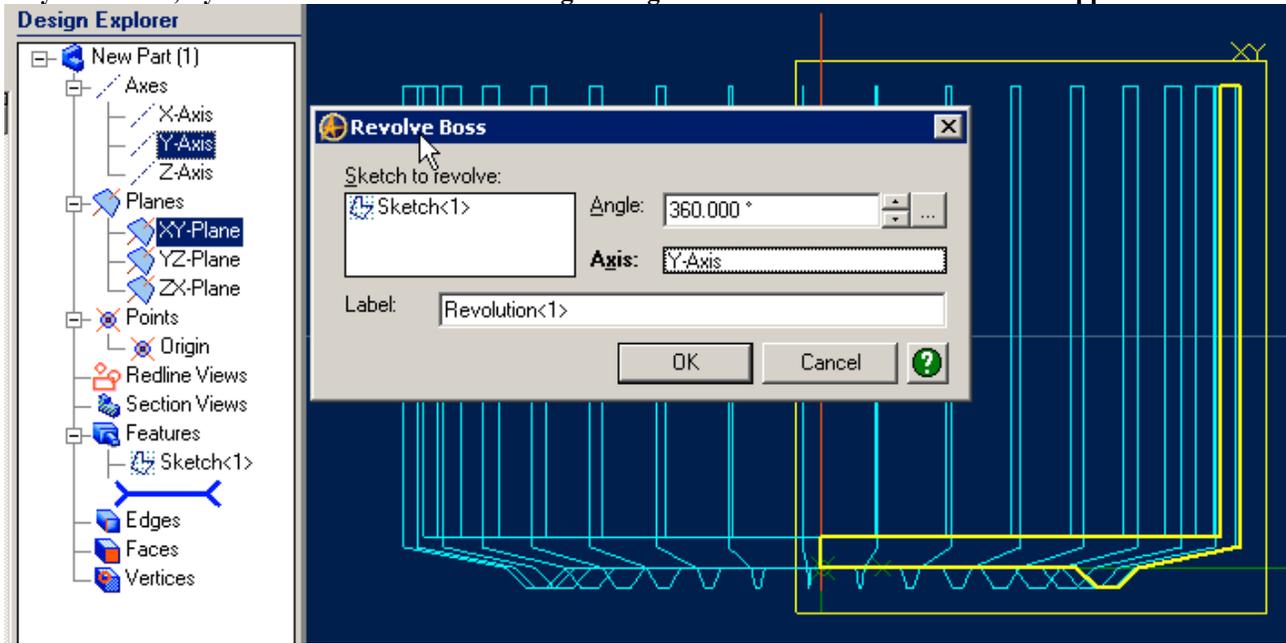

Only remaining item to select is the Axis: Click in the space for Axis: Then select the Y-axis, the vertical green line in the sketch (Y-Axis), As you mouse over it, it will become Red:
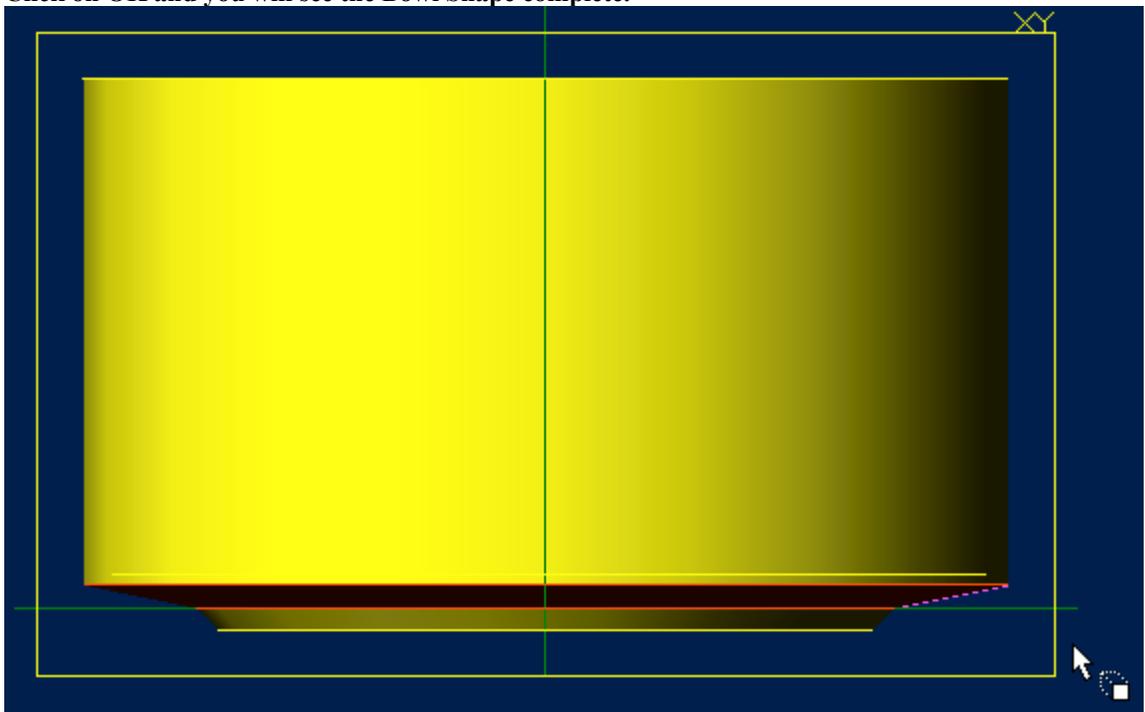

Or Select the Y-Axis in the design explorer., again - the Y-Axis becomes Red.
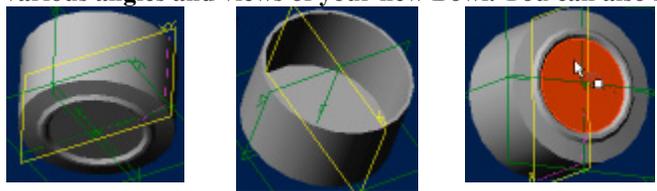
As you select it, I you will see the sketch area image change to reflect the revolved Bowl in a stepped format.

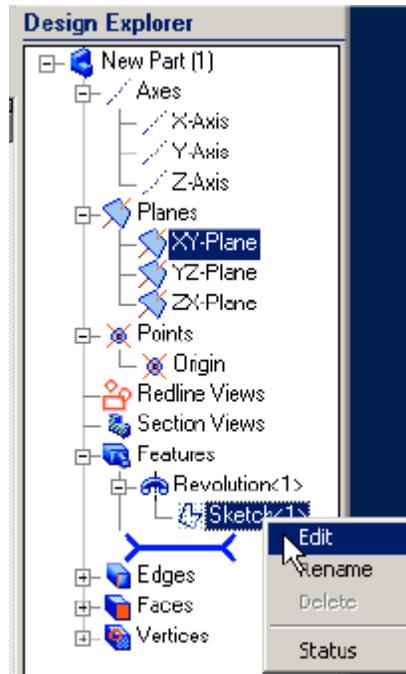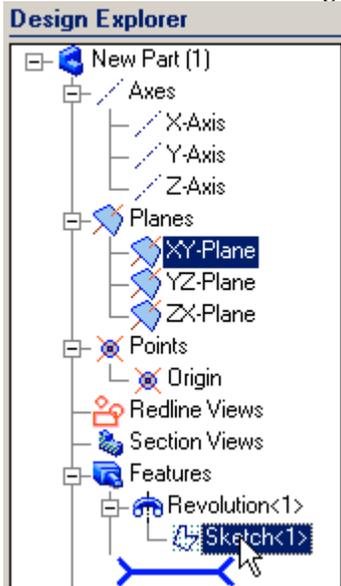**Click on OK and you will see the Bowl Shape complete.**

Click and hold both left and right mouse buttons while the cursor is in the workspace to move around to see various angles and views of your new Bowl. You can also see as you mouse over surfaces, they become Red.
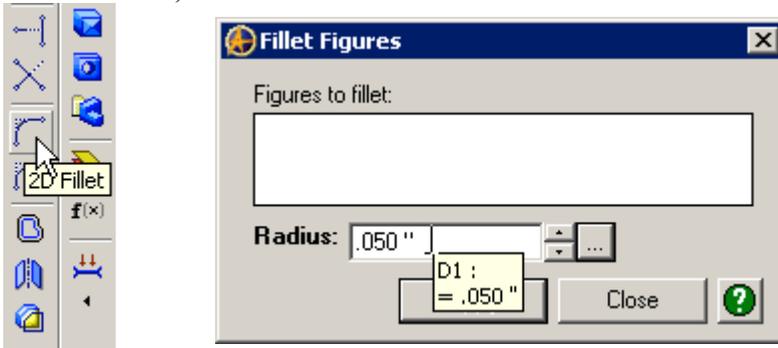
Now to Refine and Smooth out the Edges of the Bowls Profile:
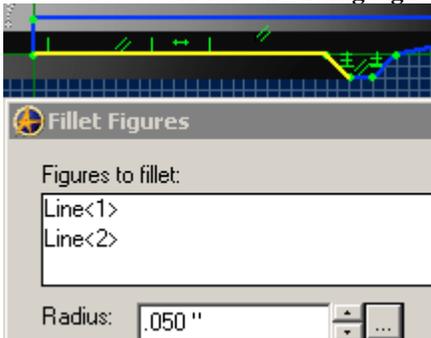
Edit Sketch<1>:

Select Sketch<1> in the Design Explorer Window.   Right-Click: Select Edit from the pop-up menu.

Select 2D Fillet, set Radius: 0.050 ".

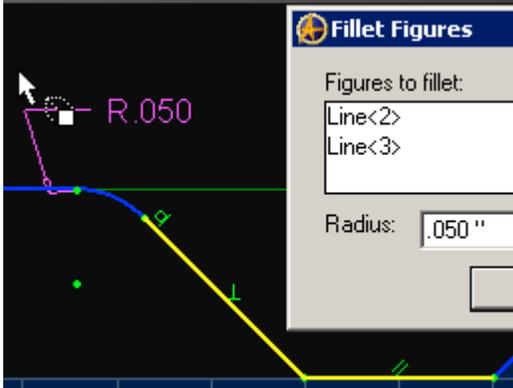**Select the bottom line extending right from the origin (Line<1>), and the first 45 degree Line down (Line<2>),**

(To select more than one line, Hold down the "Shift" Key while clicking.)
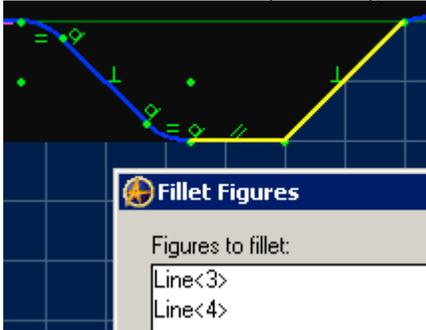
Click Apply. (The Fillet is inserted)

Select the first 45 degree down line (Line<2>), and the bottom line (Line<3>), Click Apply.
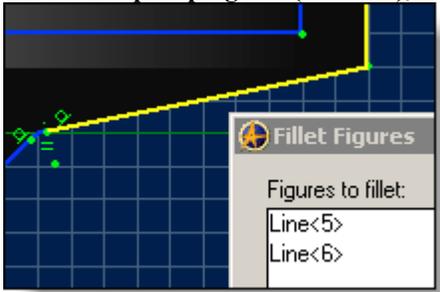

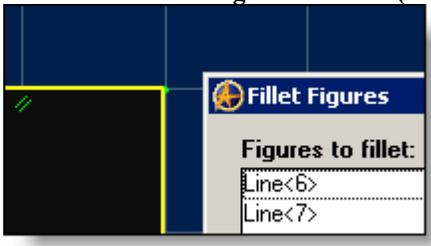**Select the bottom Line (Line<3>), and the second 45 degree line (Line<4>), Click Apply.**

Select the second 45 degree line (Line<4>), and the next up-sloping line (Line<5>), Click Apply.

Select the up-sloping line (Line<5>), and the bowl outside edge vertical line (Line<6>, Click Apply.
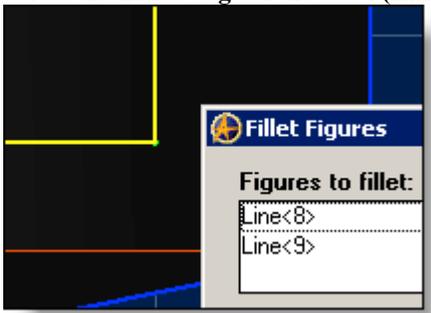
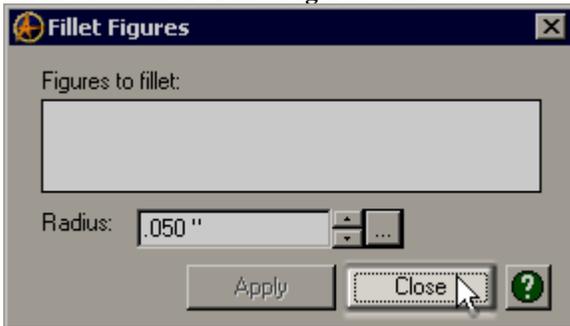**Select the outside edge of the bowl (Line<6>), and the top edge of the Bowl (Line<7>), and Click Apply.**

Select the top edge of the Bowl (Line<7>), and the inside edge of the bowl (Line<8>), Click Apply.
(Zoom in if required.)

Select the inside edge of the bowl (Line<8>), and the inside bottom line (Line<9>), Click Apply.
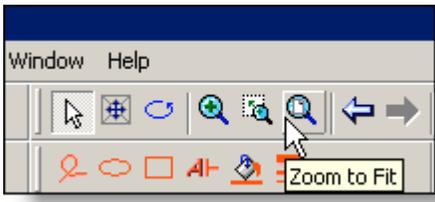

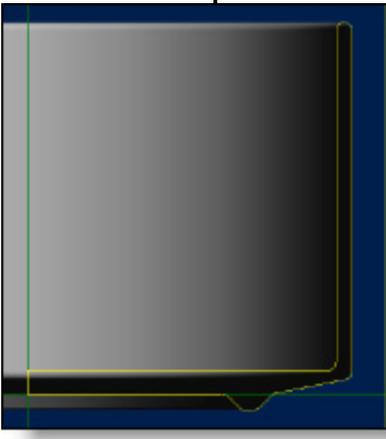**Click Close on the Fillet Figures window.**

Zoom in at the bottom of the bowl at line<1> and Line<2> intersection - the first fillet,
Reposition the fillet dimension to suit.

Do a 'Zoom to Fit' to see everything. Now click on the "Select" Cursor Symbol at the top Icon Menu.
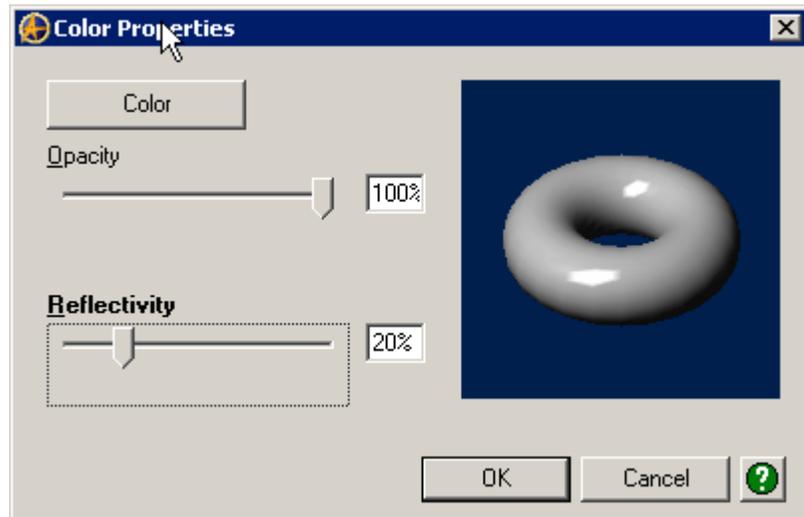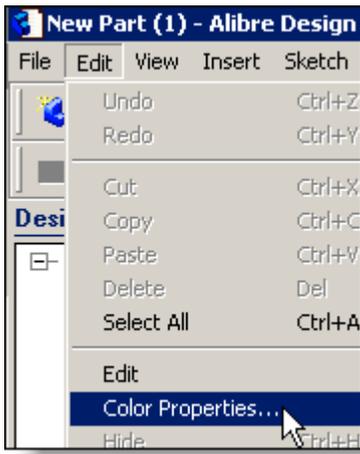

The Revolve will update itself to the new Filleted edges.
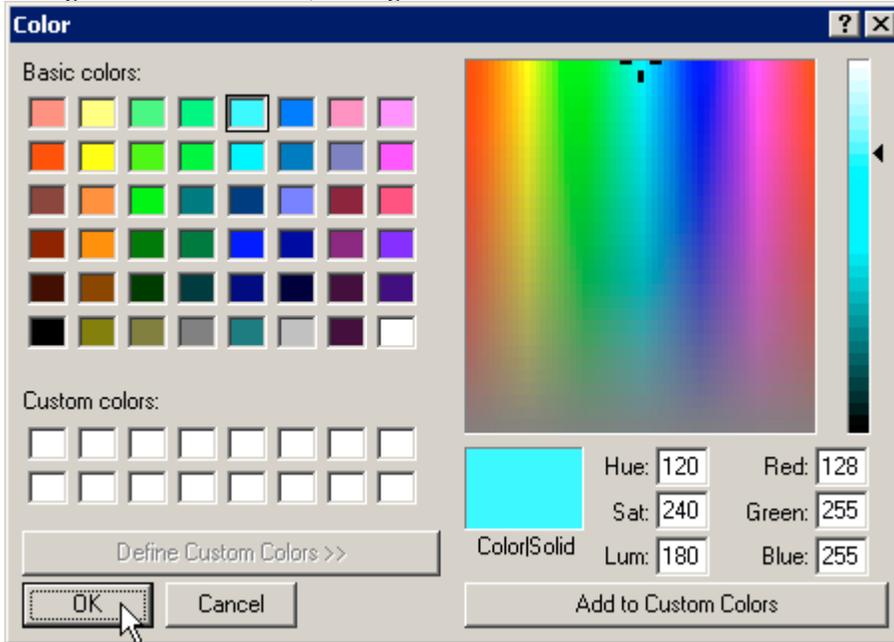

Click and hold both left and right mouse buttons while the cursor is in the workspace - move around to see various angles and views of your new Bowl.
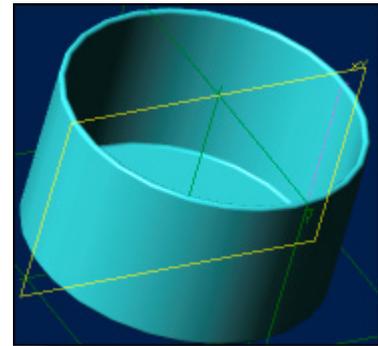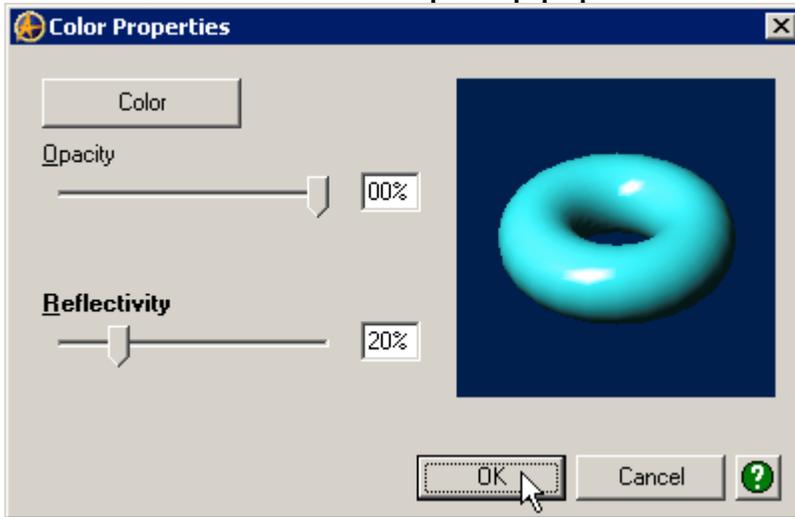
To add a little special touch to you're new Bowl, Select Color Properties from the top Text Menu under Edit. On the pop-up menu, leave Opacity at 100%, Set Reflectivity at 20%.
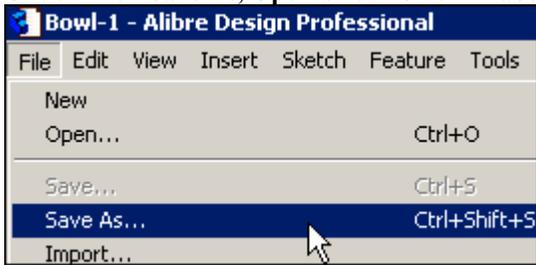
Select a Color for your bowl under the Color Button: The top Turquoise is a good choice, but pick any light Color for a good effect. Click OK, closing the color selector.

Then Click OK to close the Color Properties pop-up box. Your new Bowl now has a color, and reflectivity!

Under File - Save As, Open a new folder - Label it Tutorials, Name your part as Bowl-1, and click save.

Congratulations! You have completed the Tutorial on Bowl-1.

For a review of the Features and Menu items covered in this tutorial, go to the next page.

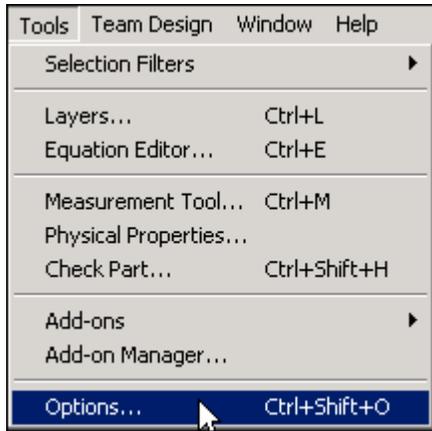# Tutorial Exercises - Bowl-1 Review of Commands and Icons.
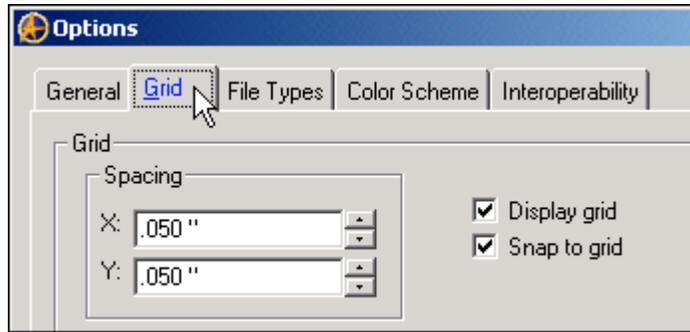
Alibre Design Home Window:

New Part Window

Text Menu - Tools: > Options: >   **Grid.**
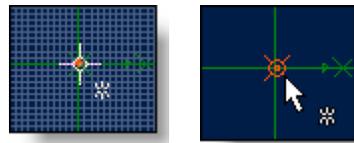
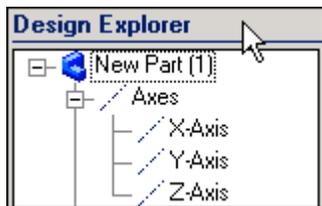**Activate Sketch Mode,**   **Line,**   **The Origin (Sketch   /   Feature)**
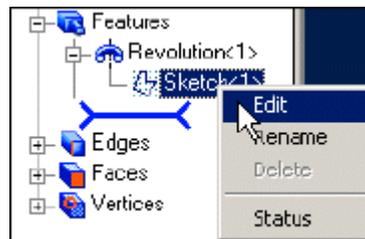
Revolve Boss   **Design Explorer**   **Edit Sketch**   **2D Fillet**

Shift+Click (Multiple Selections); 3D Viewing Control with Left & Right Mouse Buttons Depressed.
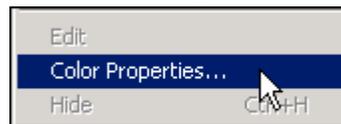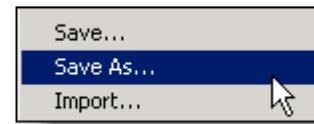
Zoom to Fit   **Select**   **Edit-Color Properties**   **File - Save as**

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