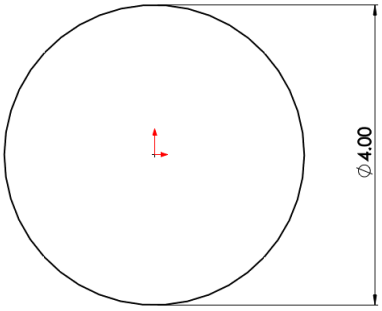
SOLIDWIZE

ONLINE SOLIDWORKS TRAINING

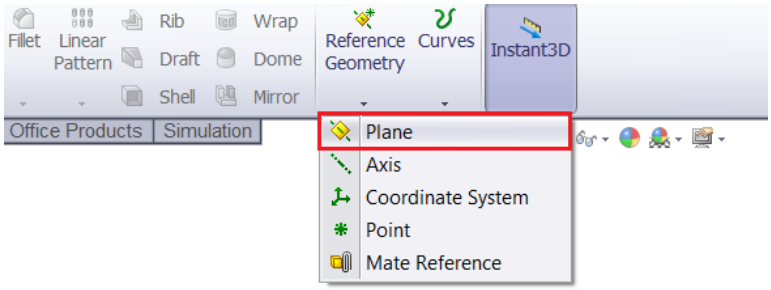
Lofts: Tea Pot

Step 1: Creating the Body

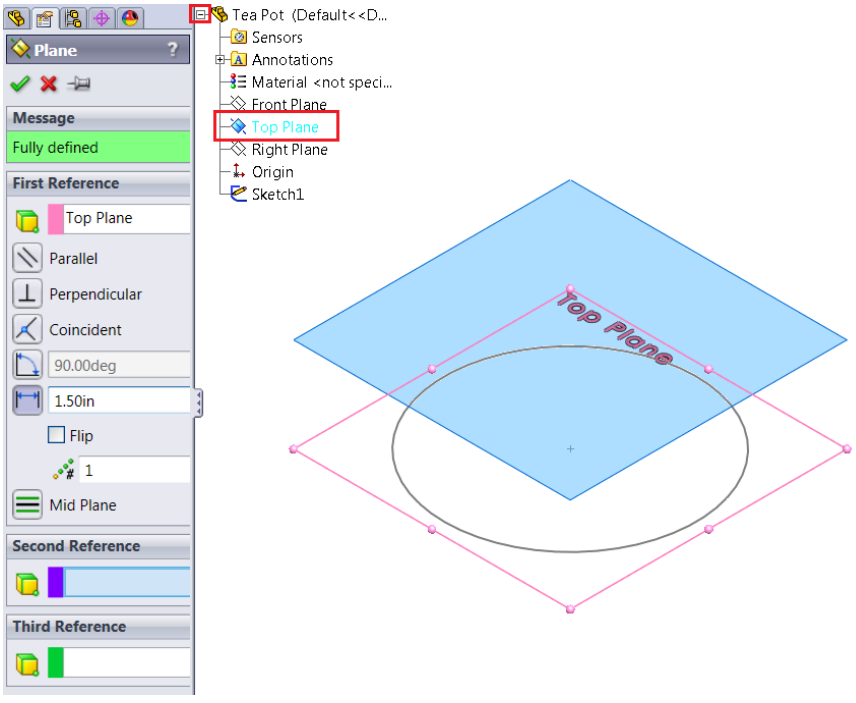
Using **inches** as the unit, create the following sketch on the **top** plane.



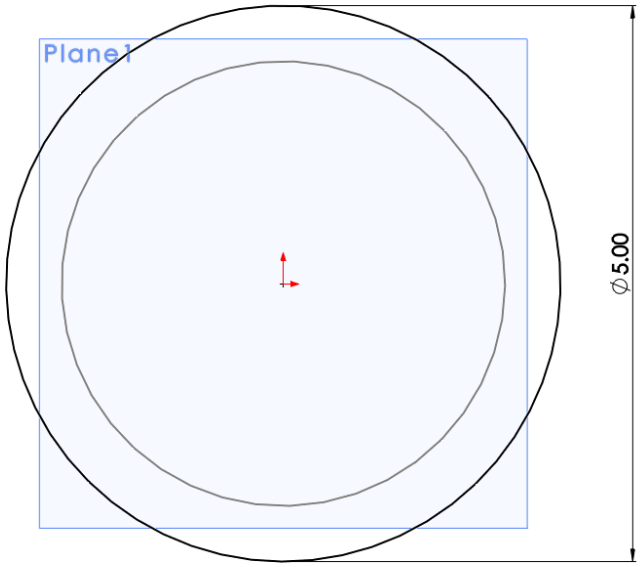
We will now add a plane above the top plane so that we can add another sketch profile for the shape of the tea pot's body. To add a plane select **Reference Geometry > Plane** from the **Features** tab.



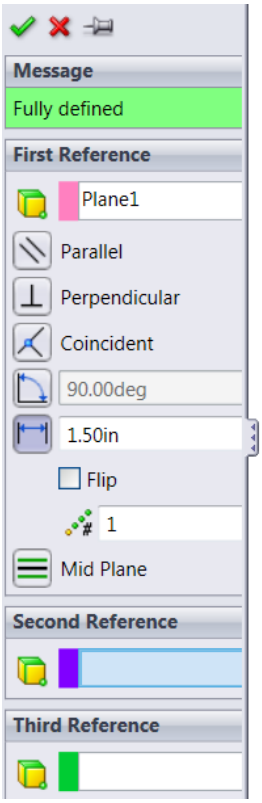
Select the **top plane** as the reference plane and set the offset to **1.50 in.**

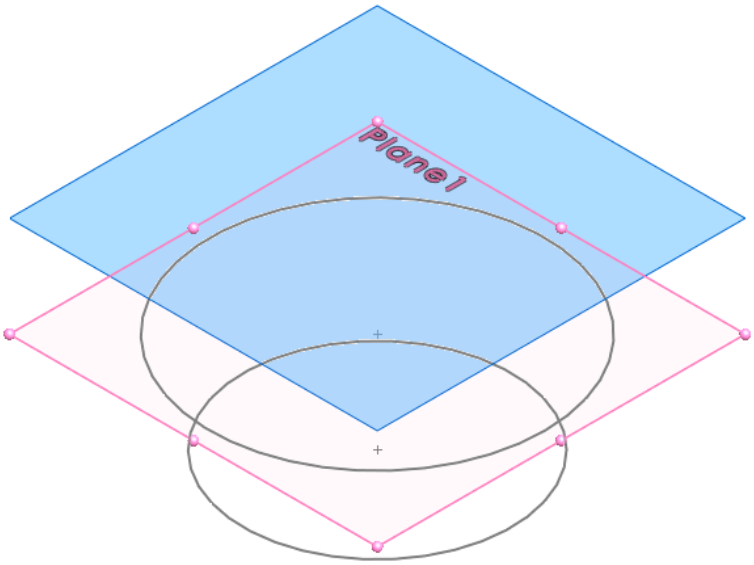


On **plane 1,** the newly created plane, create the following sketch:

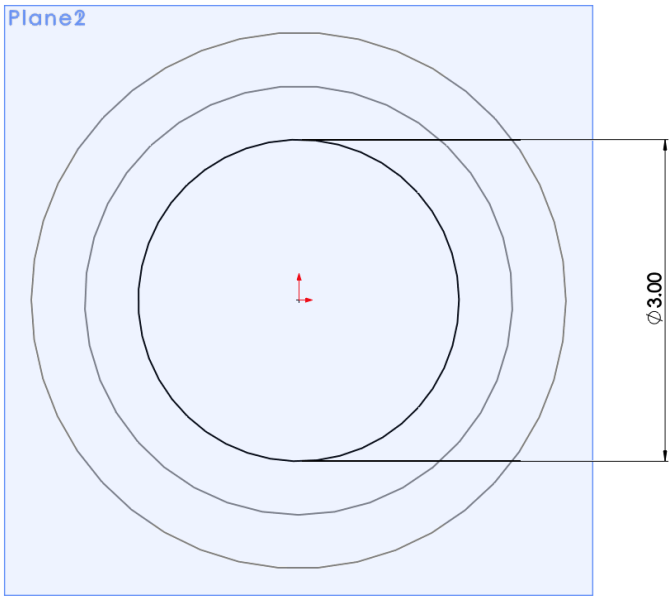


For the last profile, create another offset plane from **Plane 1,** use an offset of **1.50 in.**

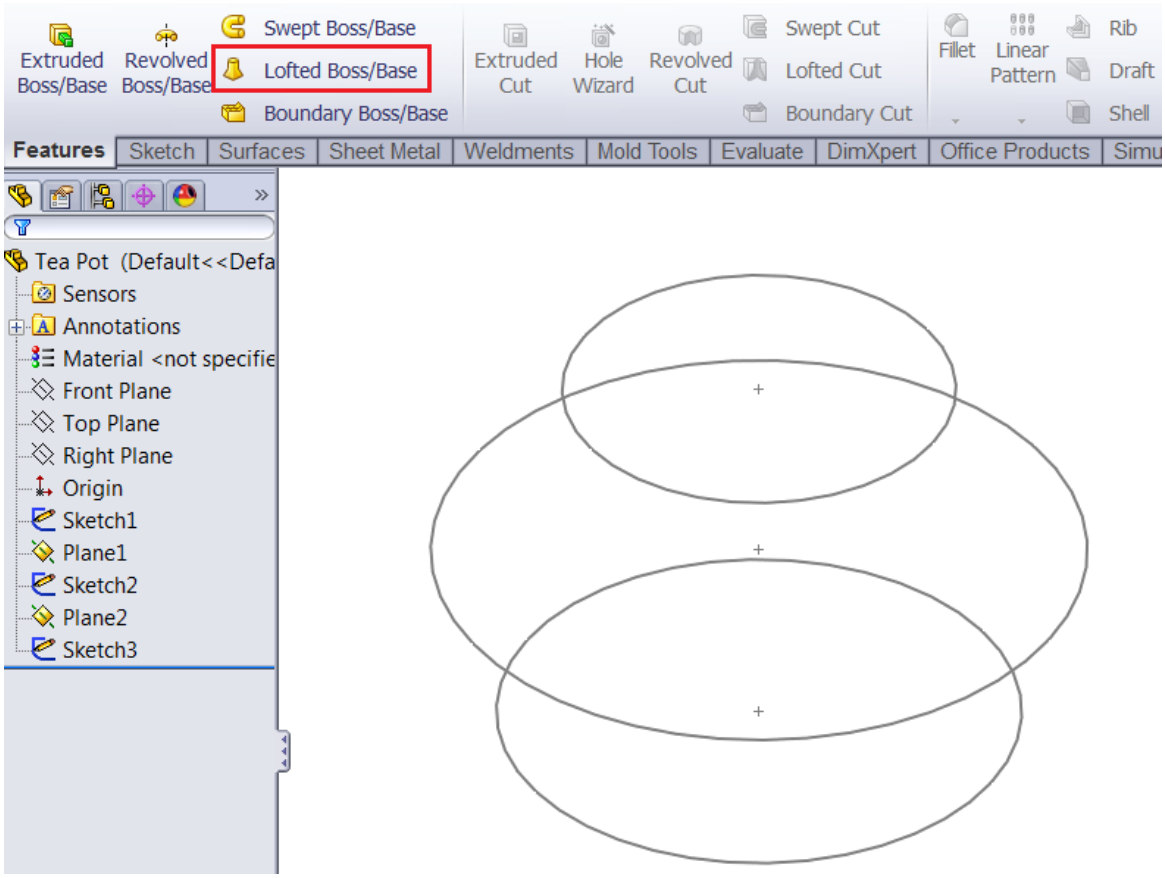




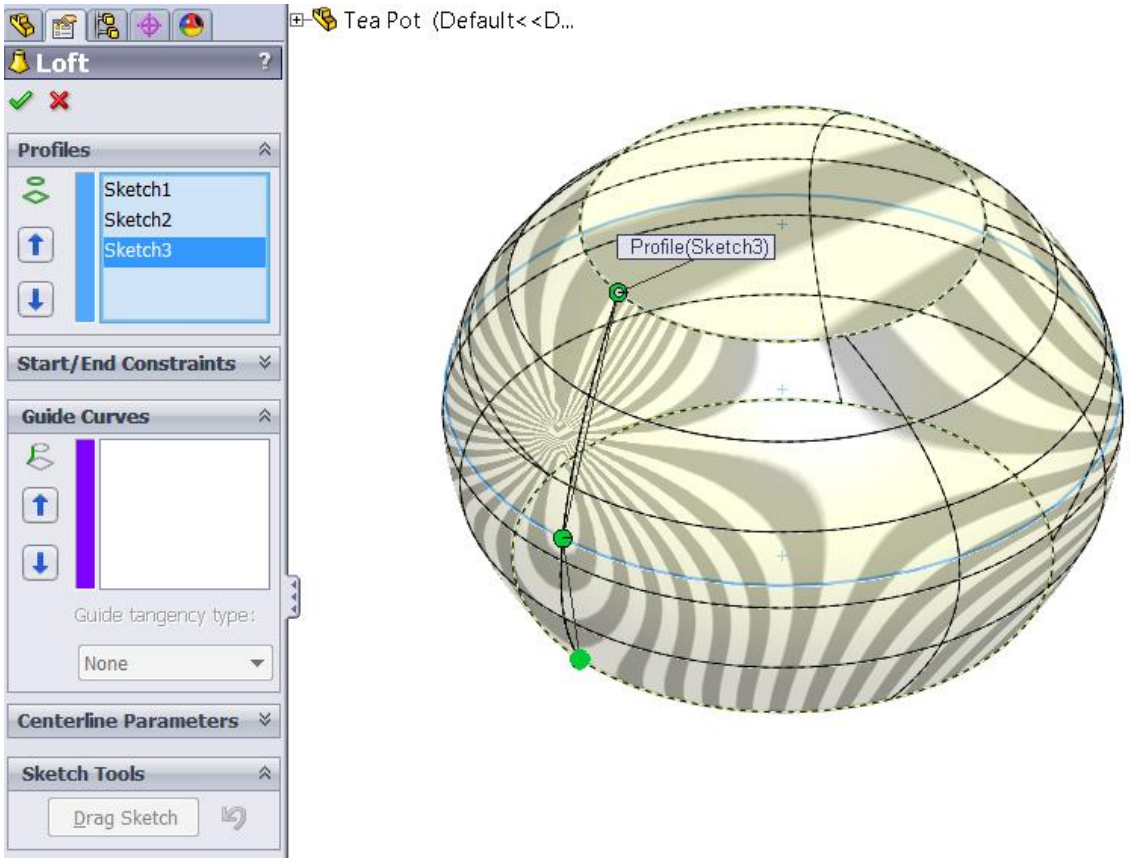
Create the following sketch on the plane:



We will now loft these circles to create the body of the tea pot. Select the **Lofted Boss/Bass** tool from the **Features** tab.



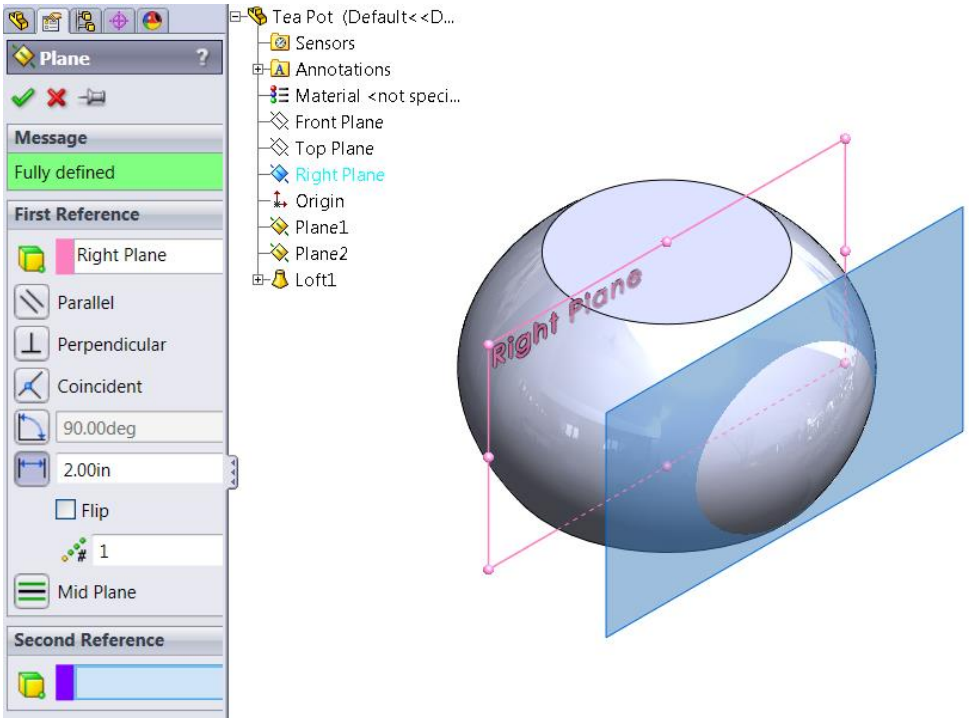
Select the profiles (sketches) in order, either from top to bottom, or bottom to top.



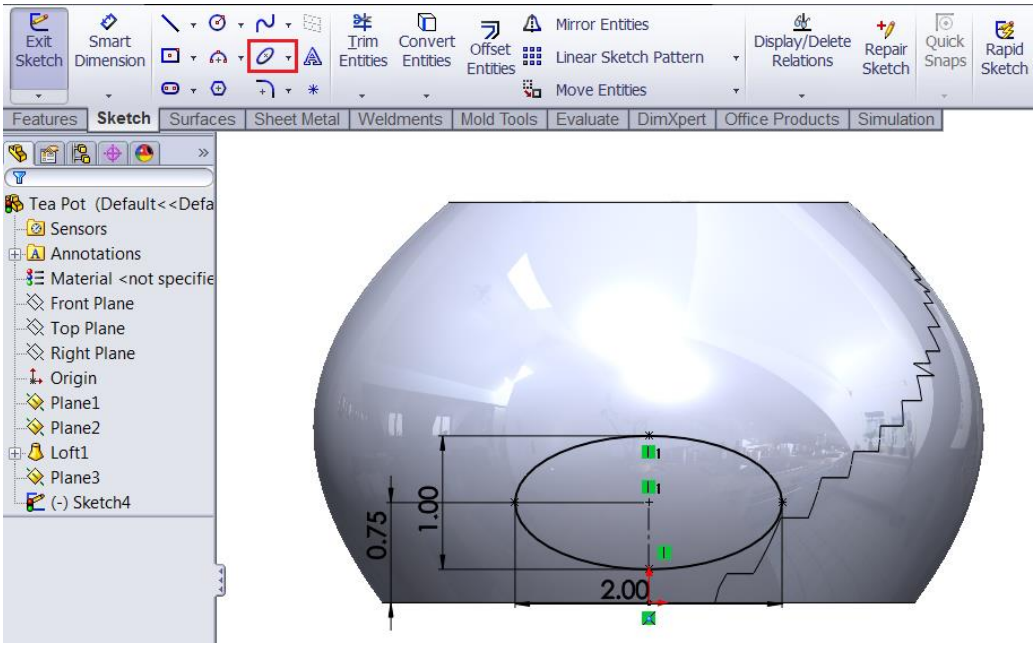
The resulting loft should look like the following:

Step 2: Creating the Spout

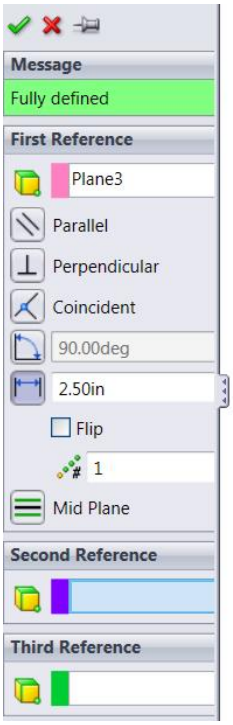
To create the spout, we will have to create another plane parallel to the right plane. Create an offset plane using the **right plane** as the reference plane with an offset of **2.00 in.**

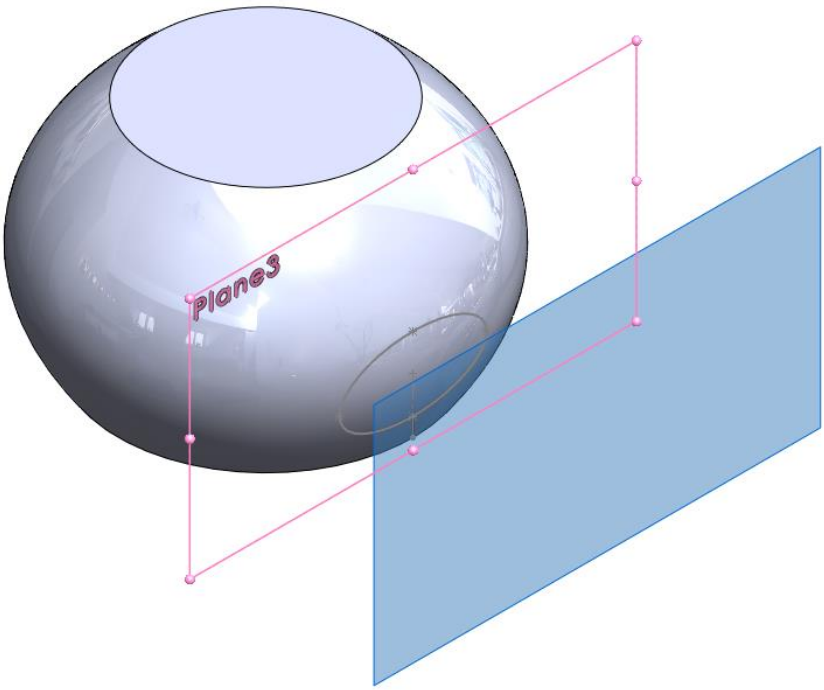


Create the following sketch on this plane. The ellipse tool was used; the tool can be found in the sketch tab as shown below. Notice the vertical relation between the point on the ellipse and the origin.

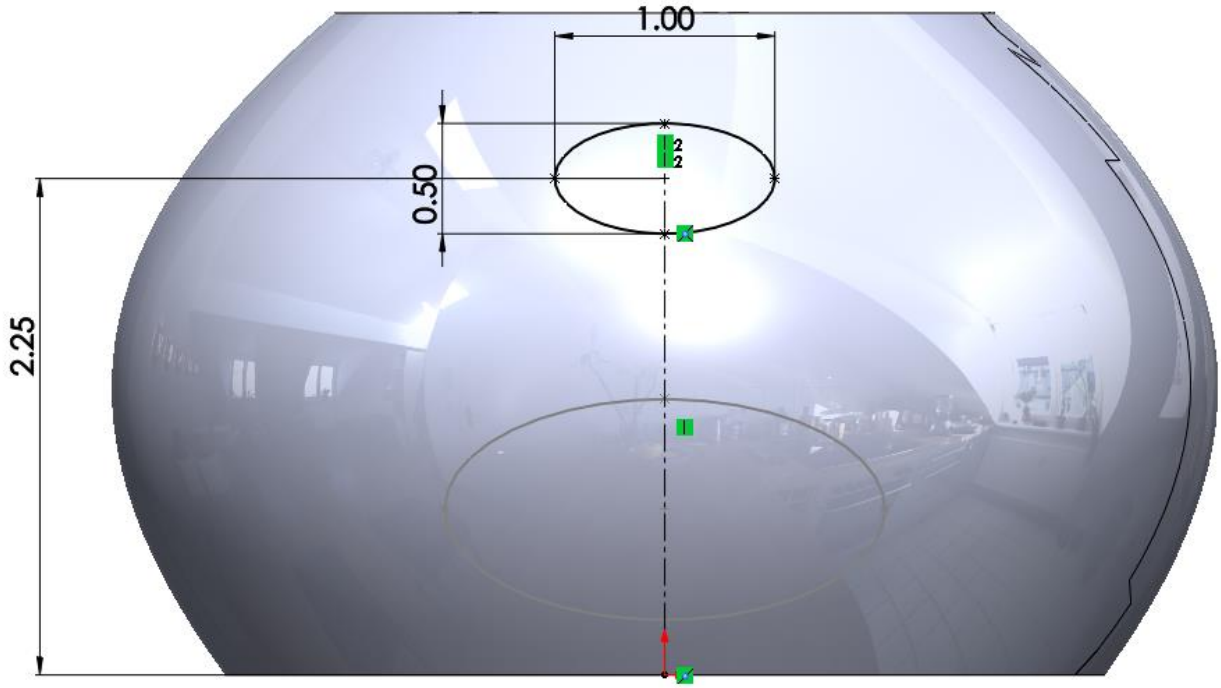


Create another plane offset from the previous plane. Use and offset distance of **2.50 in.**

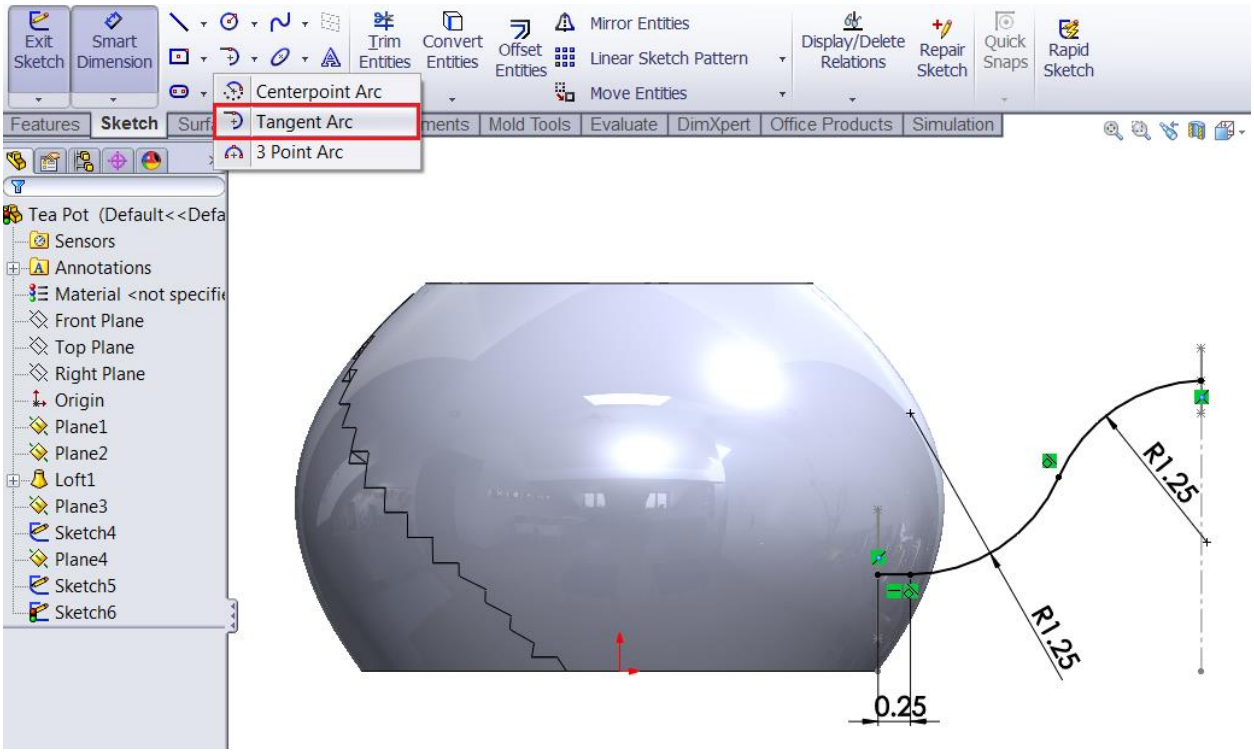




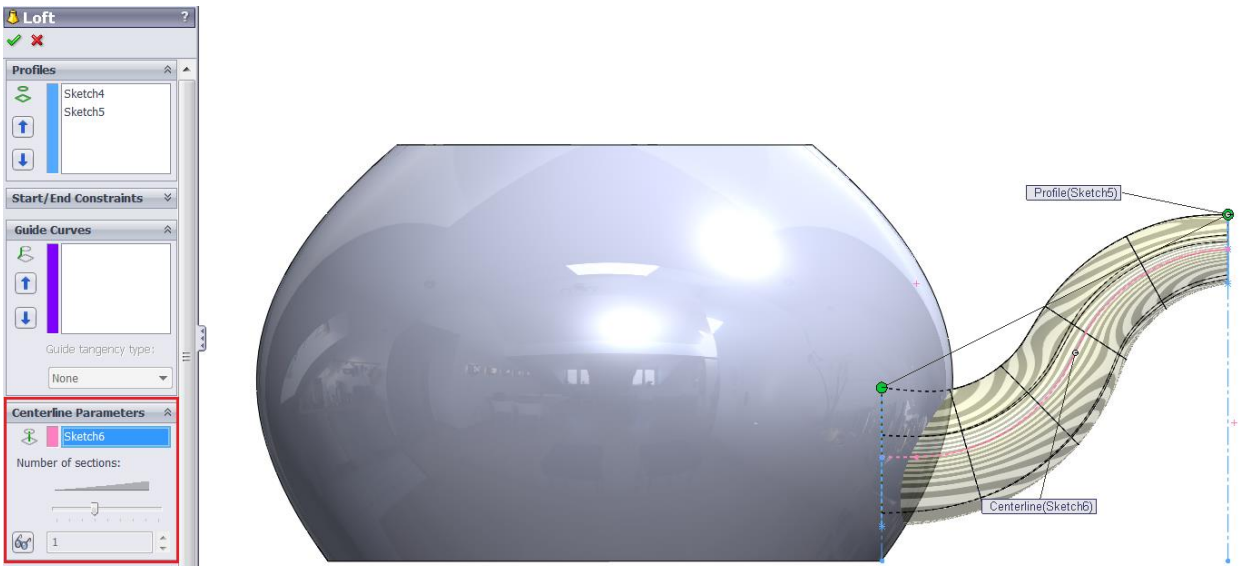
Again, create another ellipse on this plane:



We will need a centerline profile as guide for the loft. Create the following sketch on the **Front Plane**. In this sketch, the **tangent arc** tool was used; this tool can be found in the sketch tab as shown below.



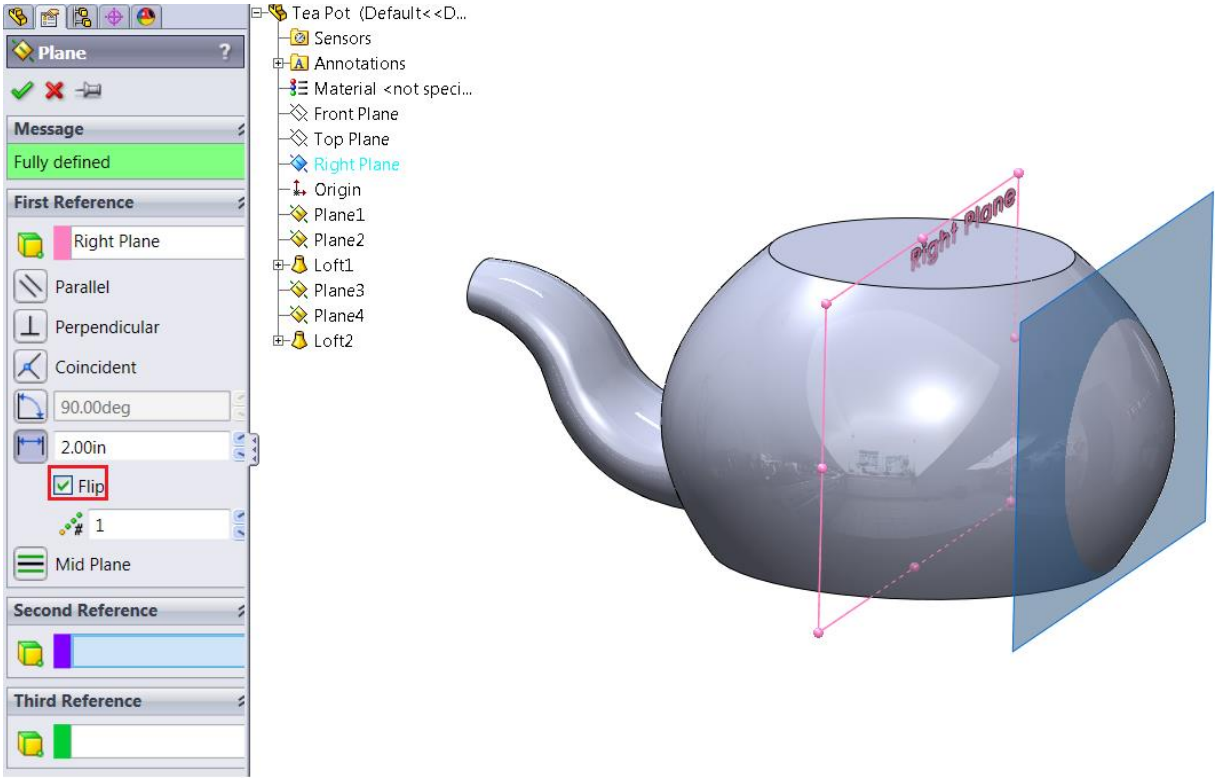
Create a lofted feature using the two ellipses as the profile. Select the **"Centerline Parameters"** option to open the drop down menu. Select the previous sketch as the centerline.



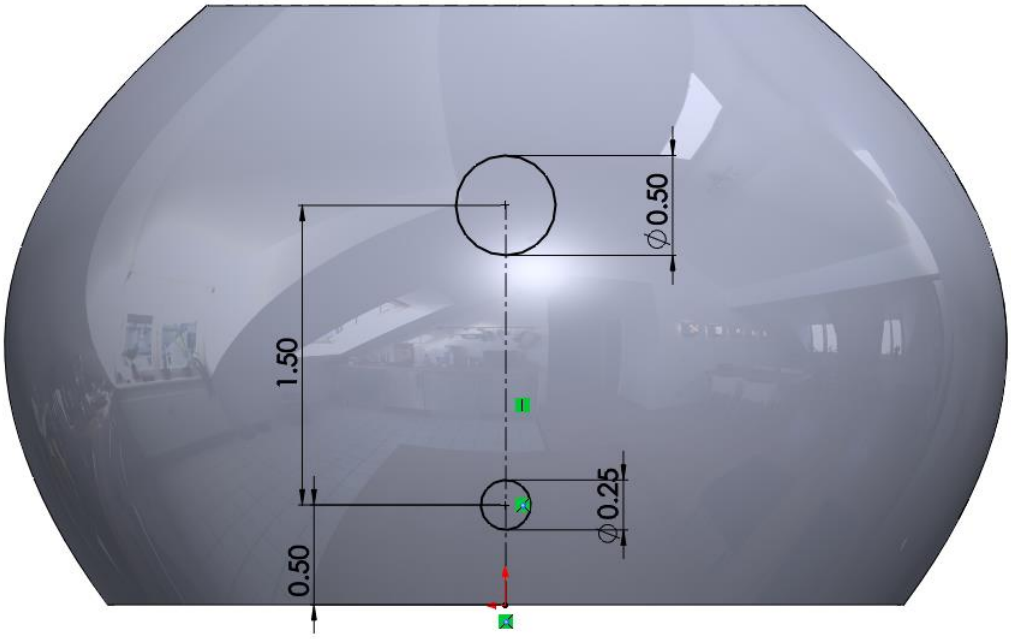
The resulting loft should look like the following:

Step 3: Creating the Handle

To create the handle, we will again need another offset plane. Create a plane offset from the **right plane** with an offset distance of **2.00 in.** Select the **"Flip"** option to offset the plane in the reverse direction.

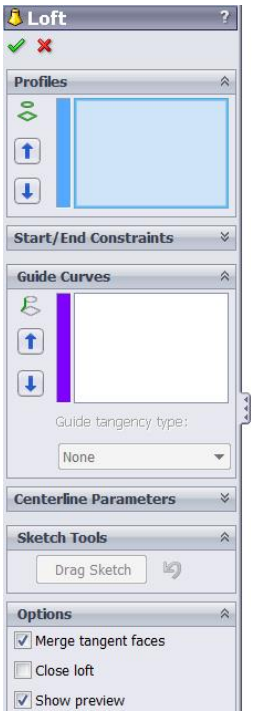


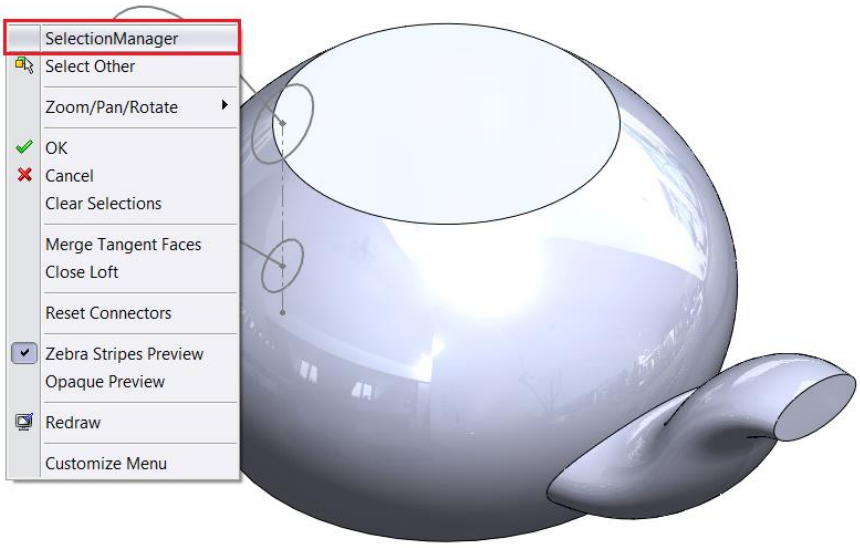
On this new plane, create the following sketch:



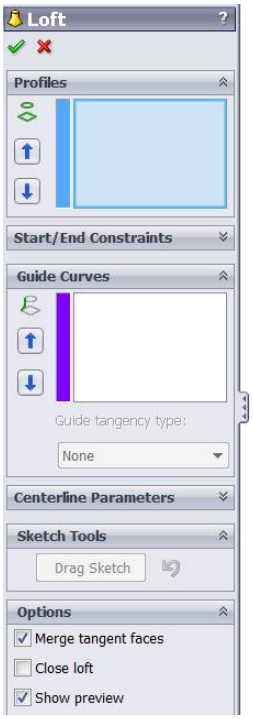
Then on the **Front Plane,** create the following sketch for the centerline of the handle. Again, the tangent arc tool is used.

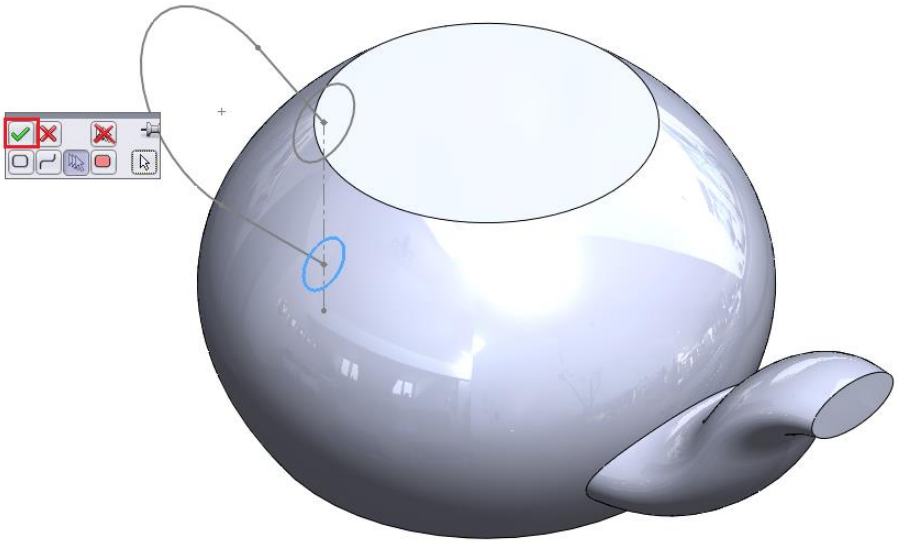
Select the **Lofted Boss/Bass** tool from the **Features** tabs. This time, since both profiles are made in the same sketch, we will use the **selection manager** to select out the contours we want for each profile. **Right Click** anywhere in the display pane then select the **"Selection Manager"** tool.



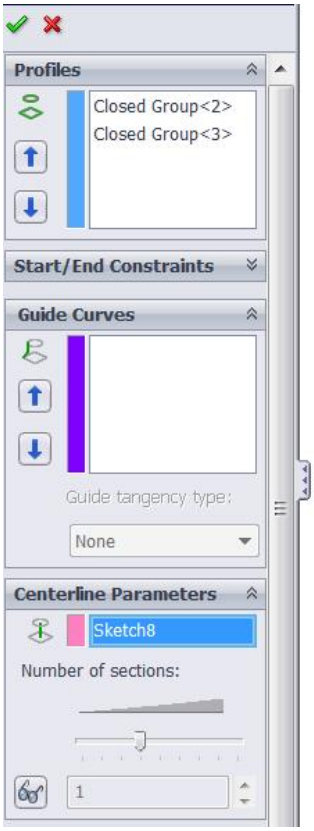


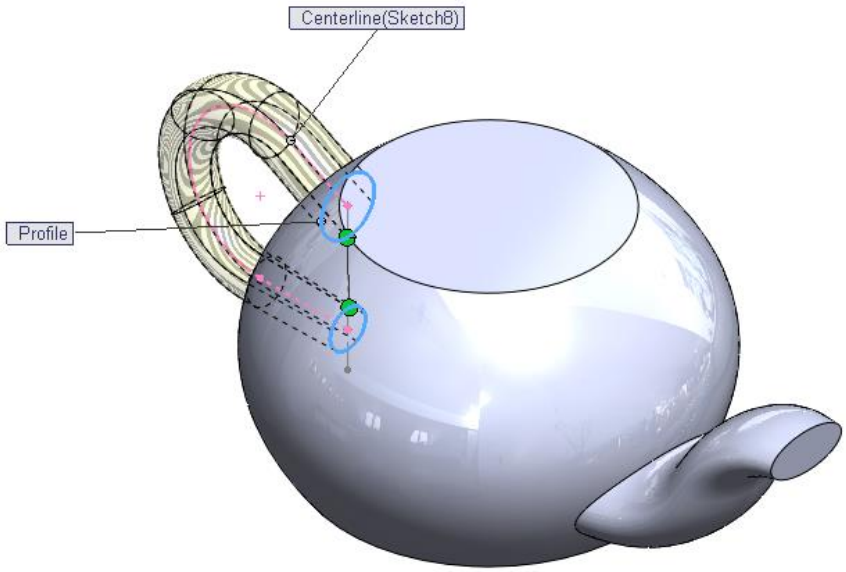
Select the lower contour and select the **green check mark** to accept that contour.





Select the top contour using the same method and select **sketch8** as the centerline.

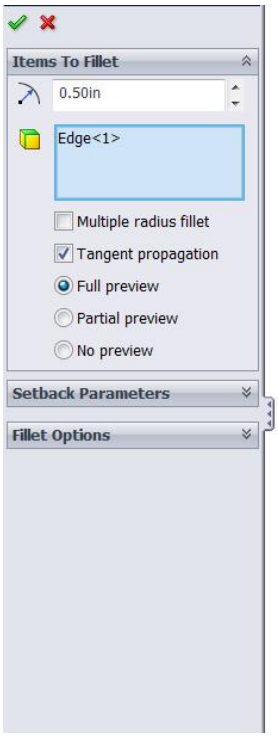


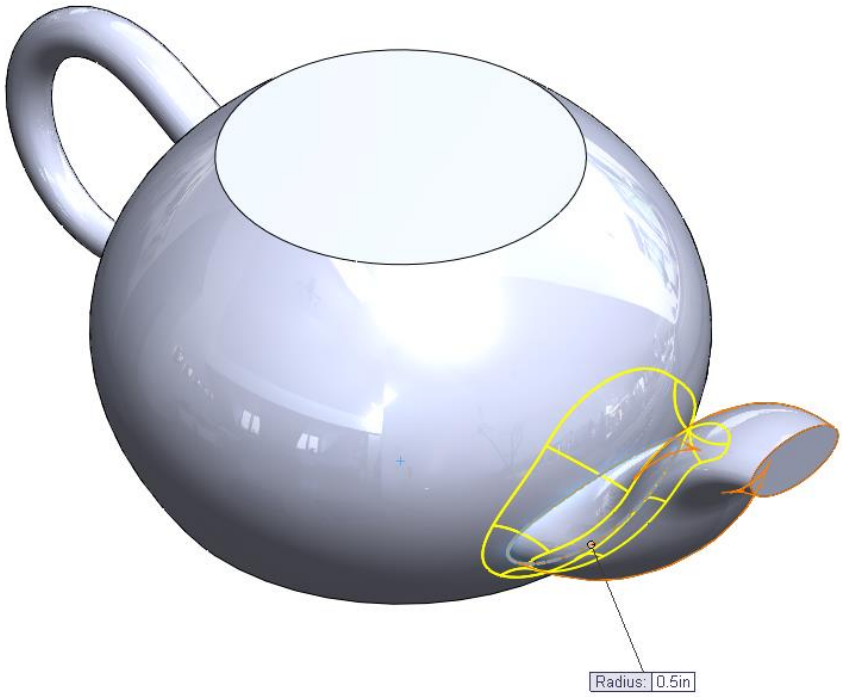


The resulting loft should look like the following:

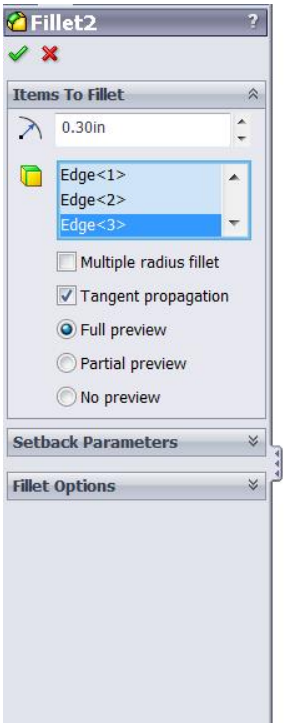
Step 4: Shelling the Part

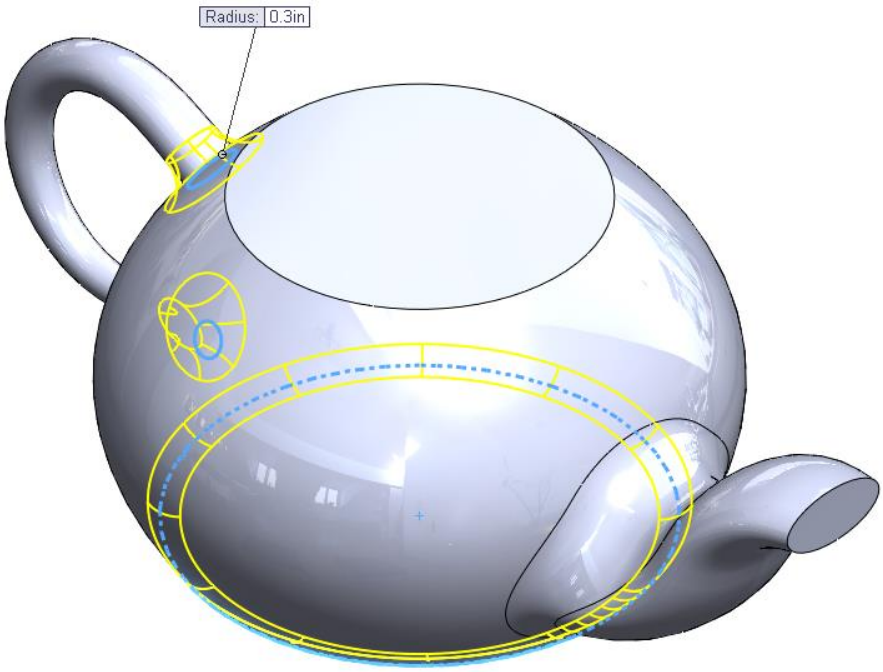
Before we can shell the part, we want to add all the fillets. Select the fillet tool from the features tab. Add a **0.50 in** fillet to the base of the spout to smooth out the transition to the tea pot's body.





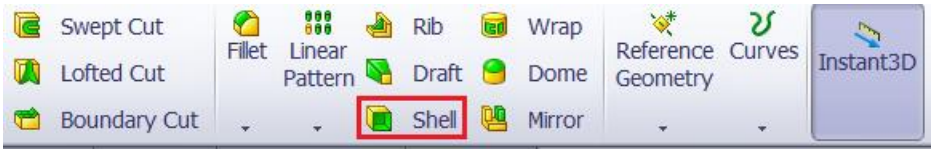
Add **0.30 in** fillets to the bases of the handle as well as to the base edge of the tea pot.



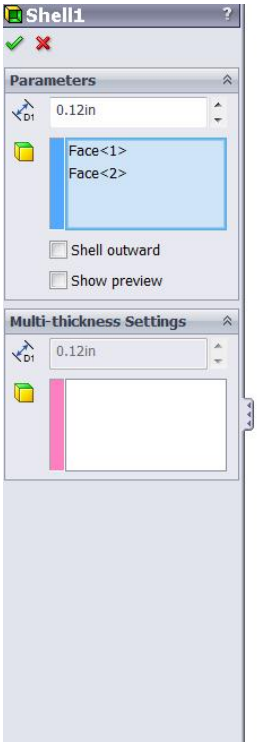


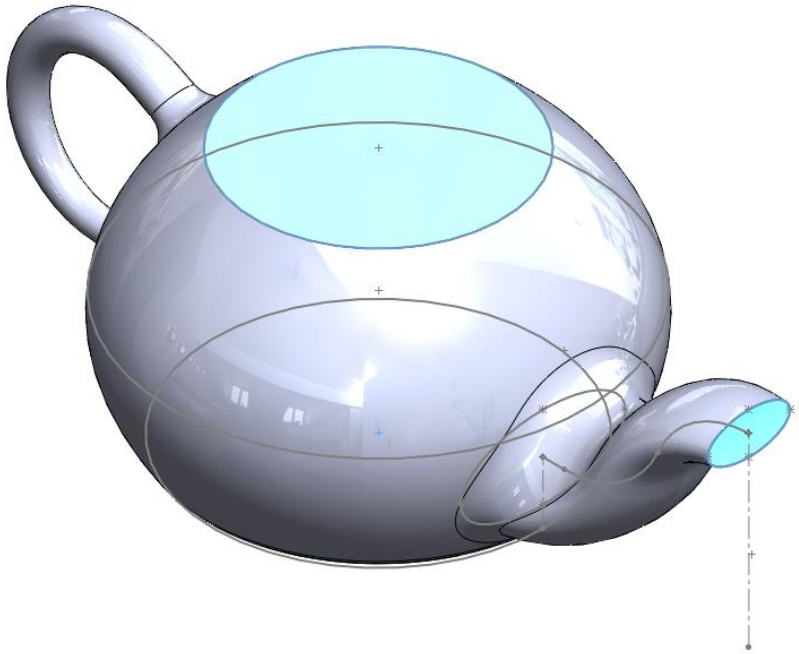
To resulting tea pot should look like the following:

To create the cavity inside the tea pot, we will use the **Shell** tool. The **shell** tool can be found in the **features** tab as shown below.

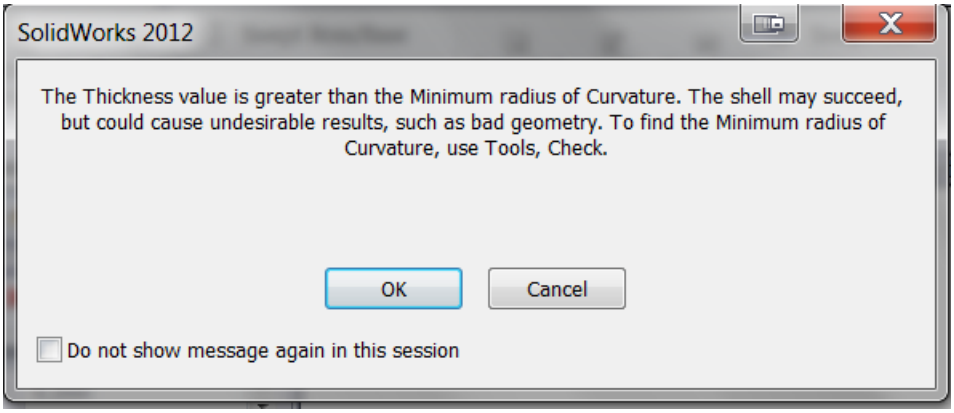


Select the top flat surface and the end face of the spout as the faces to be shelled out. The faces selected will be the “openings” of the cavity.

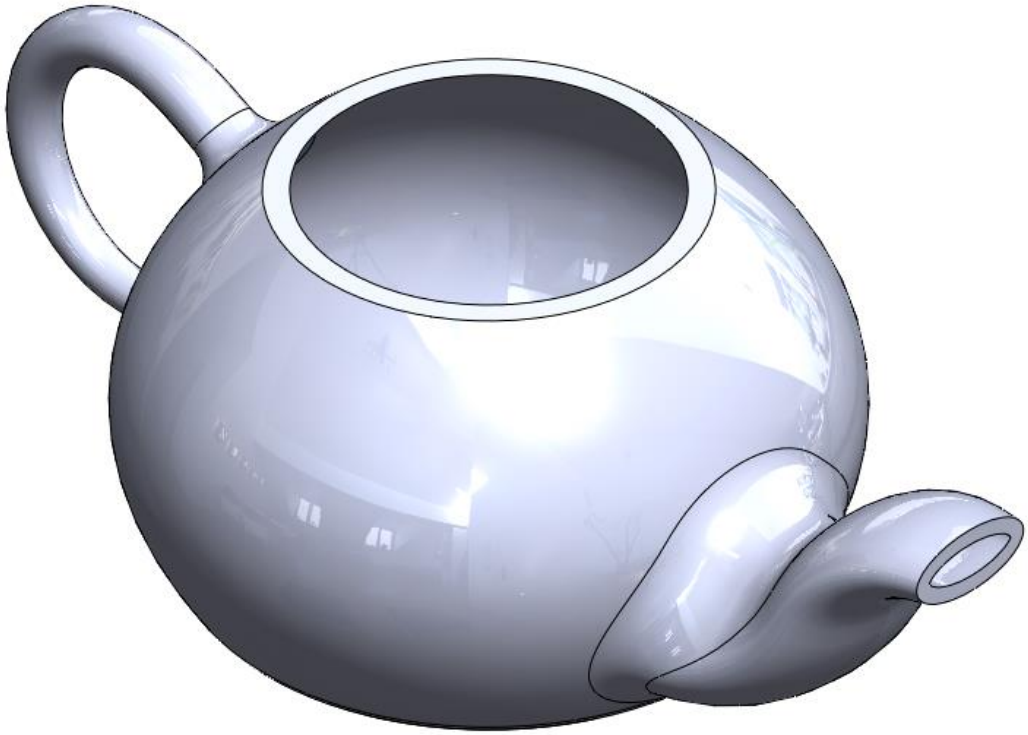




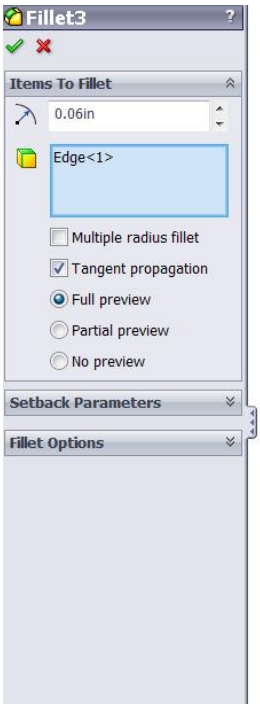
Due to some tight geometry of the fillets, you may receive the warning message below. For our purposes, we can ignore this message and select “okay”.

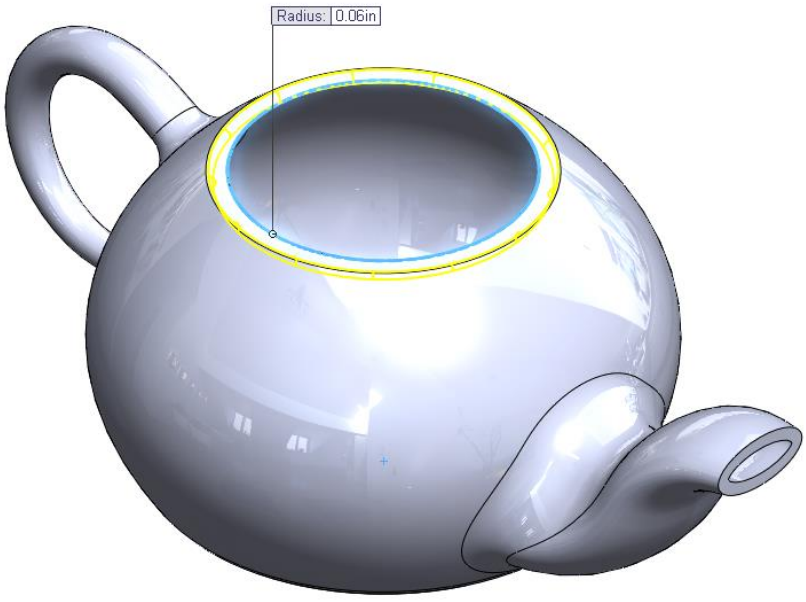


The resulting shell should look like the following:

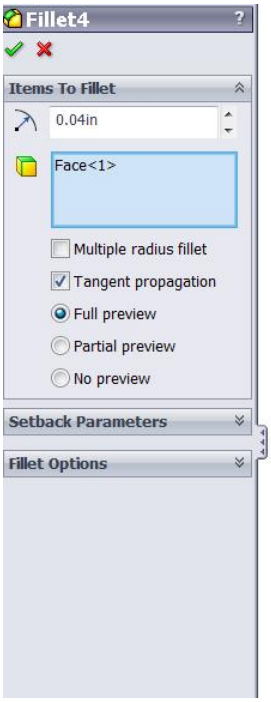


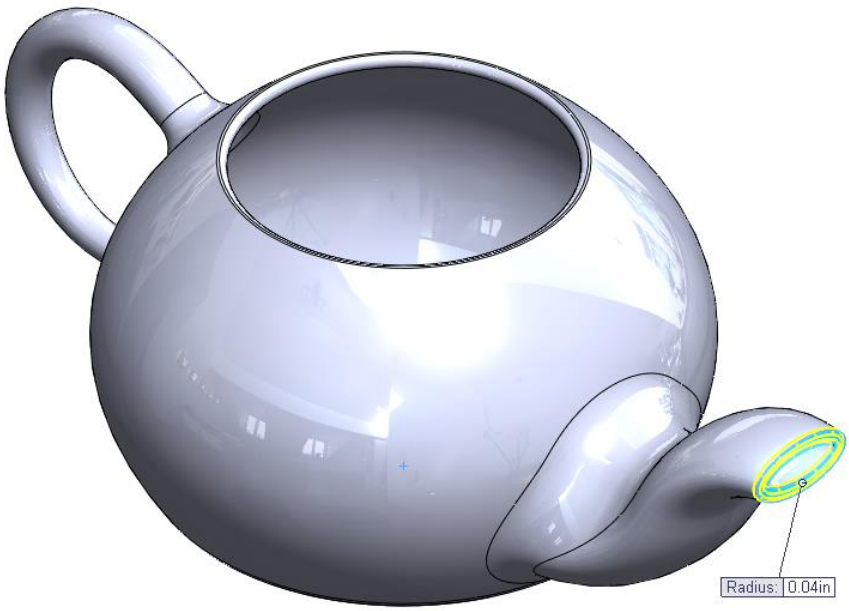
Add **0.06 in** fillets to the top edge of the tea pot to smooth out the edge.



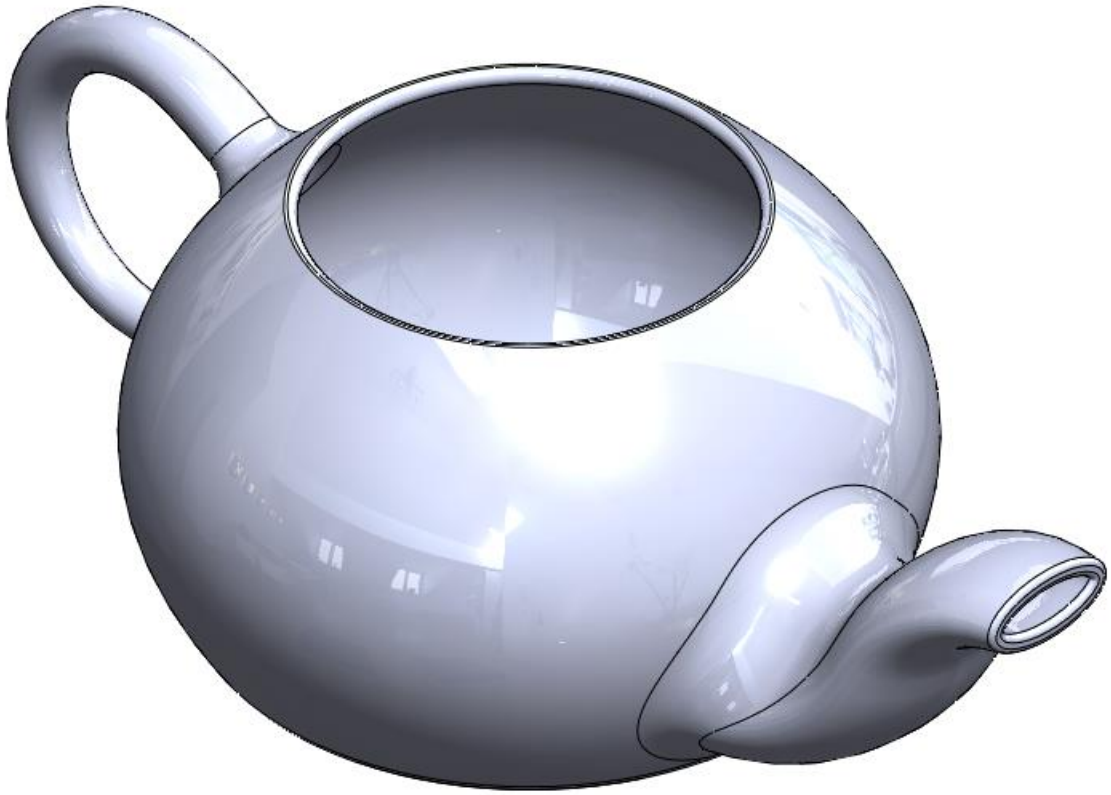


Also add **0.04 in** fillets to the edge of the spout opening.



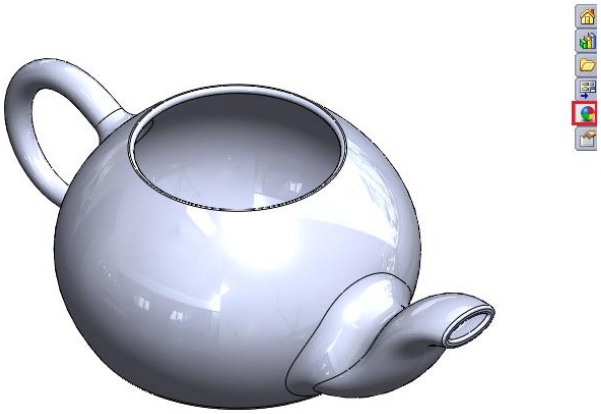


The resulting fillets should look like the following:

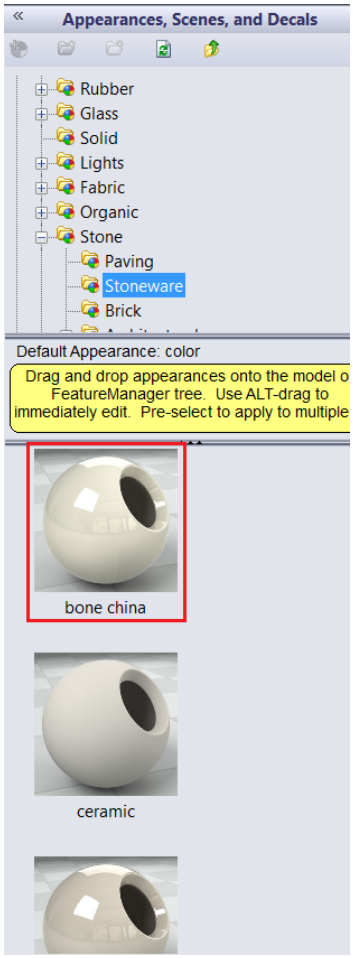


Step 5: Adding Appearance

To add the appearance shown on the cover page, select the **Appearance** tab from the right hand side of the display pane as shown below:



Then under **Stone,** select **Stoneware > bone china**. Drag the color icon onto the display pane.



The final part should look like this:

Step 6: Save and Exit

Save the part as **Loft_TeaPot.sldprt** and exit the part.