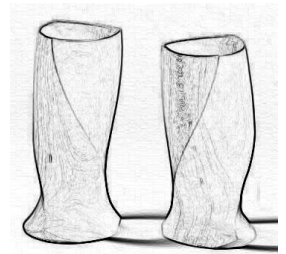
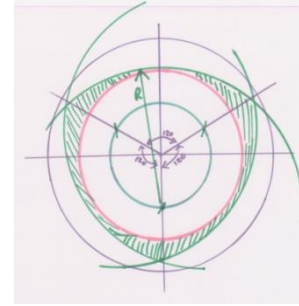
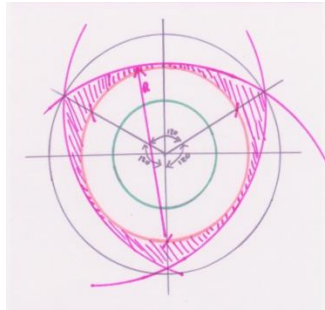
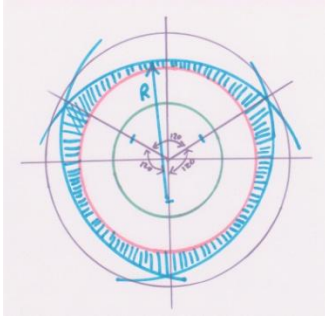


HOW TO MAKE A 3 SIDED CUP/VASE WITH TWISTED AXES

THE FOLLOWING IDEAS WILL GET YOU STARTED ON A SUCCESSFUL PATH. THESE IDEAS ARE A RESULT OF HIT AND MISS EXPERIMENTATION AND PLAY.

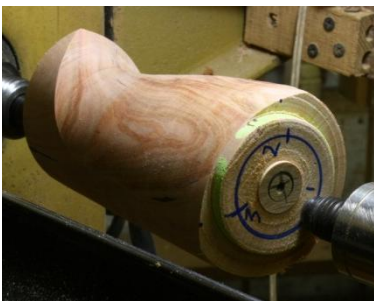


If the goal is to make this object symmetrical, then the most problematic issue is to find a way to make each axis equally deep. The strategy I use is to make a tenon on each end and put chalk on it to make it more visible. These tenons are a guide for the depth of the cut at the top and the bottom. The tenon is also the outside edge of the opening on the top. So this size becomes a design element.



The next issue to be solved is where to place the new axes. The requirement is to place them so that the arcs will intersect within the cylinder and create the 3 points. It is interesting to find that they can be placed almost anywhere within the cylinder, even fairly close to the outer edge. It is convenient to place them inside the tenon. In the above drawings, the new axis is placed in 3 different locations related to the center of the cylinder. The red circle represents the tenon and the blue circle is used for reference and is about one third of the radius, as is the red circle. This demonstrates that the tenon, which represents the size of the opening, must be at least a third of the radius from the outside edge of the cylinder for the arcs to intersect and form the points. I'm sure that this dimension could be found mathematically as well.

The next challenge is to match the curves on each side. I use the tool bar as a reference point for both the depth and the narrowest part of the curve.



After the outside curves are turned, place the wood on the center axis and make the tenon on the bottom to fit the 4 jaw chuck. Now this can be hollowed and finished. I do carve the top of the inside of the cup to match the points on the outside.

THESE IDEAS CAN BE USED TO CREATE ANY BOWL, VASE OR CUP WITH 3 OR MORE SIDES!!!

SUMMARY:

- Turn wood into a cylinder;
- Turn tenons on each end that represent the size of the opening and the bottom;
- Color tenons with chalk for visibility;
- Mark angles and number the axes;
- Turn each axis using the tenons to determine the depth of the cut on each end and then turn the desired curve;
- Place between centers and form the tenon for the 4 jaw chuck;
- Hollow the form.

Barbara Dill
www.barbaradill.com
Rockville, Virginia
April, 2012

