

Inside-Out Woodturning (Ornament)

Demonstrator: **Matt Harber**

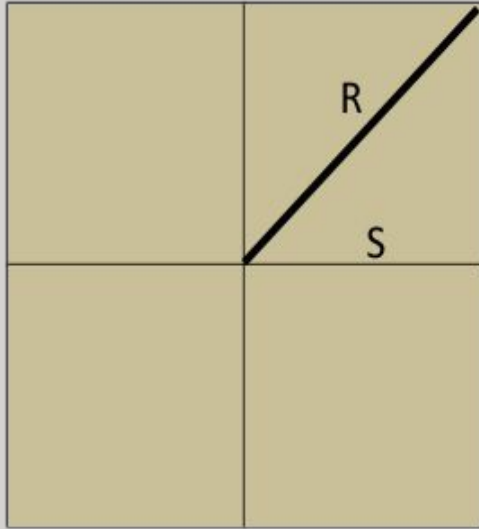
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Math (Page 1): 4 posts



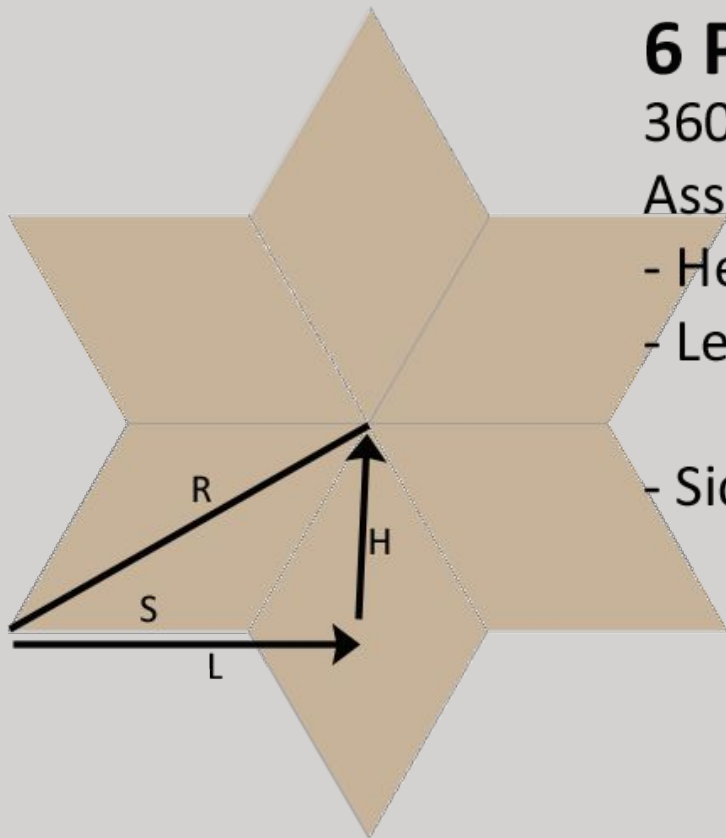
4 Posts

360° (full circle) / 4 = 90° (cut angle)

Assume radius (R) = 2".

Then side (S) = $R \sqrt{2} = 2'' \times 0.7071 = 1.414$

Math (Page 2): 6 posts



6 Posts

360° (full circle) / 6 = 60° (cut angle)

Assume radius (R) = 2"

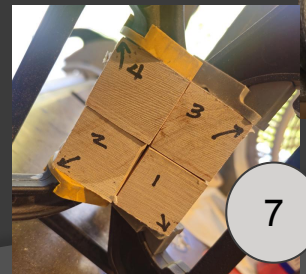
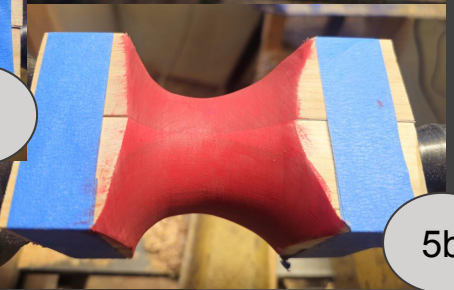
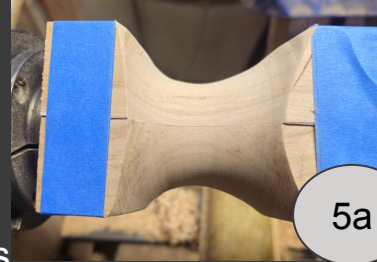
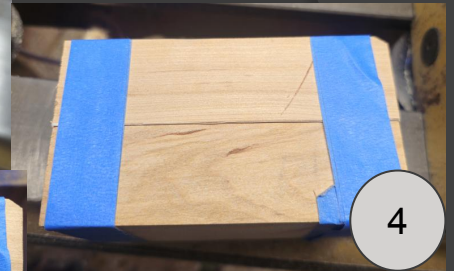
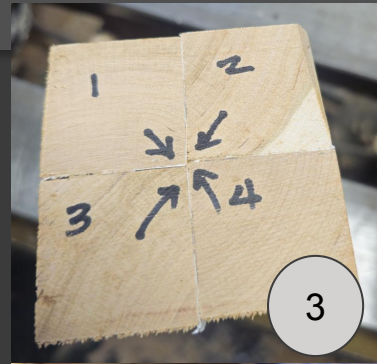
- Height (H) = $R \sin 30^\circ = 2'' \times 0.5 = 1''$

- Length (L) = $R \cos 30^\circ = 2'' \times 0.8660 = 1.732''$

- Side (S) = $H / \sin 60^\circ = 1'' / 0.8660 = 1.1547''$

Steps and Process:

1. Using the calculations on the previous pages, cut the necessary sections as precisely as you can.
2. Glue the sections together, preferably using paper strips between sections (so that they are easier to separate later).
3. Label the individual sections and identify the center.
4. Optional: Tape the ends of the section to add strength.
5. Turn the inside. Sand the inside. Paint/decorate.
6. Separate the sections.
7. Rotate the sections so the previous centers are pointed away from the center. Glue these sections firmly.
8. Turn the outside. Sand the outside. Finish.



Notes:

1. When using the Math pages, if you want to enlarge or reduce the size of the ornament, just change the Radius (R) and redo the calculations.
2. I used Titebond Quick & Thick glue, it dries transparent. Any wood glue should work well also. On the first gluing step, I used basic printer paper and cut 1" strips for gluing between the sections.
3. When turning the inside, the outer corners will become the center, so pay attention to the shape of things, especially at either end of the curves.
4. When turning the inside, the closer your curves get to the center, the smaller/narrower your posts will be.
5. In my demonstration, I turned small tenons so I could drill $\frac{1}{4}$ " holes for my top and bottom finials. Depending on how you plan your ornament, this step may be optional. This is just how I make these. The final outer turning could be done between centers.
6. Another option is to change the shape of the posts. The post contours are on the center glue line, so you could, for instance, make these in the shape of a snowman or a pine tree.

