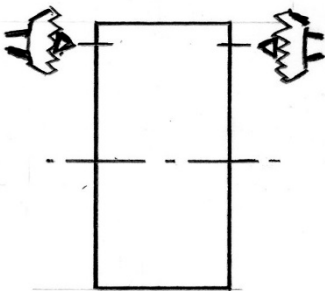
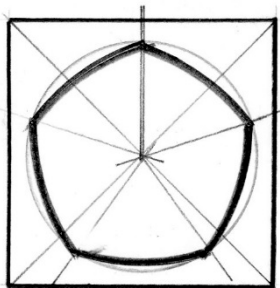
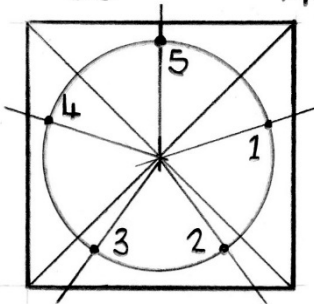
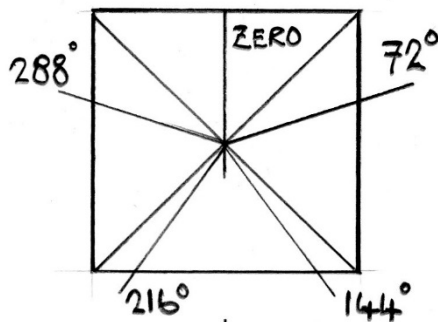
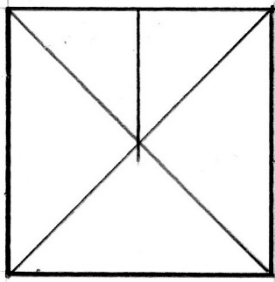


## Turning a Five Sided Bowl



Cut and prepare the blank. This must be square and parallel to each side. The blank must also be small enough to fit the swing of your lathe, when turning off centre.

First find the centre of the blank on both sides. Then draw a datum line from one centre to the other over the top of the blank. This line must be accurate as it is the main reference/zero point for the work.

Using the datum line as the reference point and a protractor put the zero of the protractor on the datum line.

Now divide 360 degrees by the number of sides of the bowl. In this example five, which is 72 degrees.

Now mark off each section i.e. 72, 144, 216, 288 degrees. You now have four pencil marks and the datum line to show the point of each side.

Using a compass draw a circle from the centre of the blank through each of the pencil marks. This will give you the starting point for marking each of the sides. NOTE: do not draw too close to the edge of the blank – room must be left for the lathe centres to grip and drive the blank.

Number each point one to five starting at the first mark at 72 degrees. Starting at point two and using a compass draw a line from the datum line to the left side of the blank. What we are now doing is drawing the sides of the bowl from the opposite points of reference.

Draw each side in turn until you have marked out all of the five sides.

Repeat the whole process on the reverse side of the bowl. Ensure the marking is accurate. When numbering on the reverse side remember to go anti-clockwise so that each number matches.

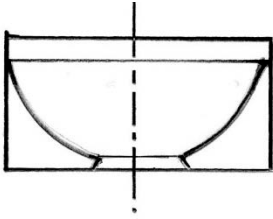
We now have the blank marked out ready for turning. Waste wood can be removed with a bandsaw, or turned away on the lathe. The work must be held firmly between two centres - I use Robert Sorby Steb centres, in both the headstock and tailstock. Gripping at point one on both sides of the blank, position the tool rest so that the work can swing clear. Check that the speed is turned down low. Switch on and start to turn the first side. Adjust the lathe speed avoiding vibration.

Using a bowl gouge begin to turn away the first side. Take only light cuts and cut straight across the work down to the pencil line. Repeat this for each of the five sides.

Work from the tailstock to the headstock, with the top of the bowl facing the tailstock. Any breakout will be turned away later.

When all five sides have been turned successfully; the bowl is then completed by turning as you would turn any other bowl.

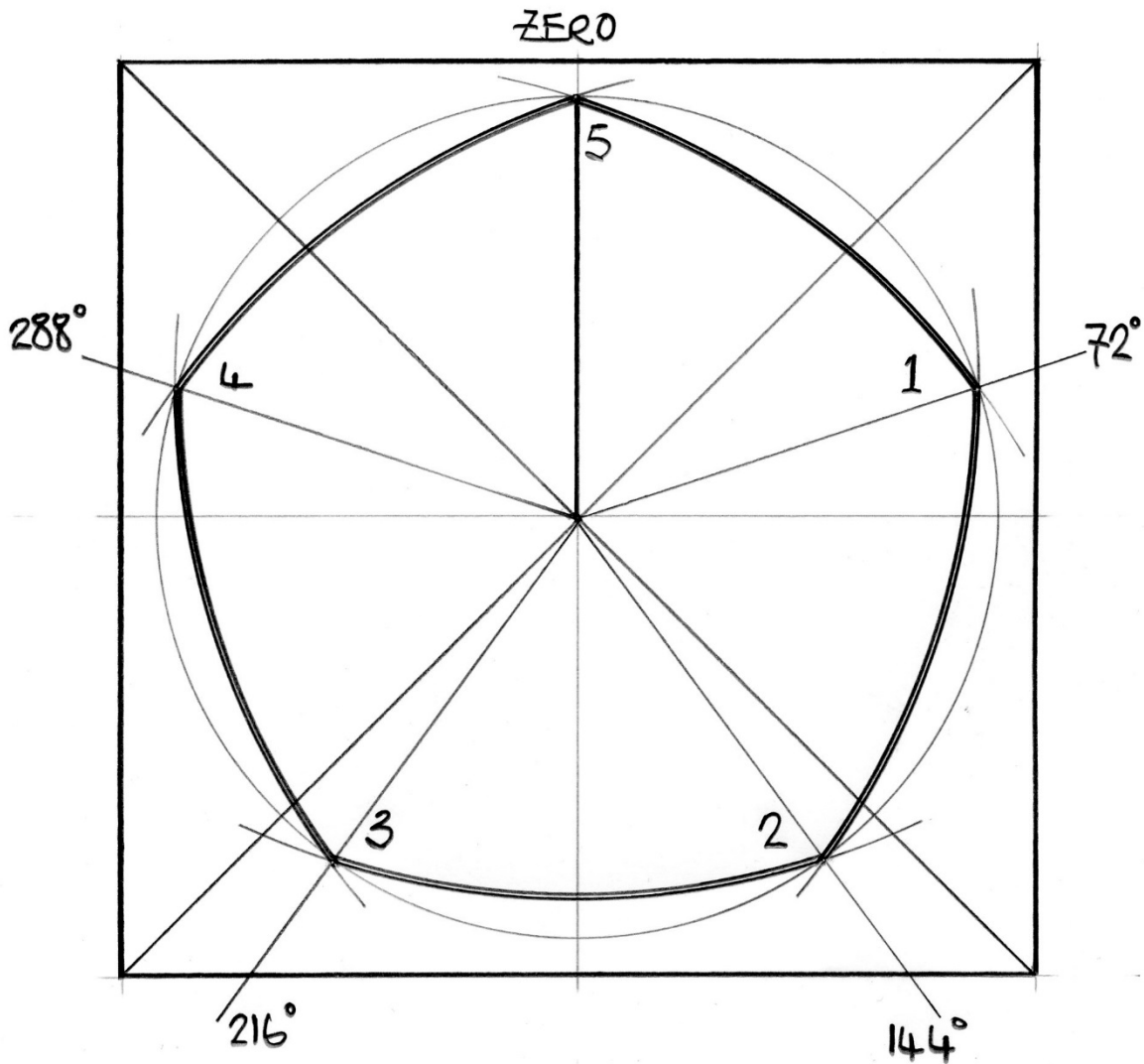
I form a spigot on the base. This enables me to see more of the shape when I have reversed the bowl. Ensure that when forming the base that you do not turn away all of the five sides that have been turned already!



At this stage you can decide where the five sides will appear on the bowl; at the top, in the middle or at the bottom - and then turn to shape. When reversed and the top of the bowl is turned, mark with a pencil the bowl part. Do not go too close to the edge or you may turn away the five points. When all of the turning is completed, finish sand as usual. The five sides will have to be sanded by hand or perhaps with a 'Sandmaster' type tool.

The bowl is now ready to be polished with your choice of finish. Whatever finish you use to buff, try using a good quality bristle paint brush. Do not use one with nylon fibres (melting is a possibility!). This will prevent your fingers from being damaged on the work.

### Enlarged Layout for a Five Sided Bowl



## Turning a Three Cornered Bowl

At a recent Club meeting of the Somerset Woodturners Club, ([www.somersetwoodturners.org.uk](http://www.somersetwoodturners.org.uk)) Nigel Maddocks gave a demonstration of turning a three cornered bowl which produced a very different and pleasing object.

The blank used should be a perfect cube, thus giving the finished piece equal width and height walls. Nigel used a 4" cube that produced a finished width of 4", a height of 3" with even thickness walls of 1/8".

### Initial Mounting:

The blank will be mounted between centres on *diagonally* opposite corners so the first process is to evenly and squarely cut off the corner designated to be at the headstock and carefully marking the centre of the flat driving area. It depends on what size chuck jaws you intend to use to hold the blank during the hollowing process as to how much of the corner can be cut away, but this need only be a fairly small section. Whilst a small four prong drive centre will do the job you should be wary that this type of drive might split the relatively small area cut to support the drive centre. A ring centre friction drive is far safer, but less secure. An ideal tool to use is the Steb centre supplied by Robert Sorby - which will supply good centring owing to its central point, and all round support due to its circular design and good grip with its serrated circumference.

The opposing corner will also need to be squared across the point to accommodate the supporting tailstock centre. Nigel used a normal pointed centre, which again runs the risk of splitting the very small surface area if too much pressure is used. Other types are available that provide a cup centre, such as the Sorby or Axminster multi head interchangeable revolving tailstock centre, both of which include a small cone support or the Axminster ring and centre point live centre, both giving support to a wider area without the risk of only one pressure point. Sorby also produce a live revolving Steb centre but I suspect that the diameter may be too big for this project.

Once the blank is mounted between centres you must ensure that it is exactly central and parallel to the lathe centre line. Bring up the tool rest and position it as close and level with the blank as you can. Spin the blank slowly by hand and watch the 3 points nearest the headstock (these will become the top of the bowl). All three must be in line as they rotate. They should only just pass the tool rest and at exactly the same distance away from it, a pencil or the point of a skew chisel can be used to measure this. Some slight adjustment may be necessary on the drive or tailstock supports to exactly centre the work. If the work is out of true at this point - it will be magnified in the finished item with visibly uneven wall thicknesses and the high points on the top of the bowl will not be level and true.

### Turning 1:

Because of the precarious nature of the supporting centres, very light cuts should be taken at all times during the initial turning. Move the tool rest so that it is parallel with the sloping sides of the blank, from the outer points to the drive centre. Using light cuts with a small spindle gouge, gently turn away excess wood from the drive end of the blank until a spigot of the correct size for the chuck jaws has been made. Remember that owing of the triangular shape of the blank at this point, you will be seeing the ghost outline and only cutting opposing sides of the wood initially until the spigot begins to fully form.

A small point of wood will be left on the end of the spigot to allow the drive centre to support and drive the work. This can be cut away when the blank is removed from the lathe and if done fairly neatly is not a critical factor affecting the shape or finish. When the spigot has been formed it should of course be circular in section and deep enough to fully support the blank when it is reversed for the hollowing process. Using a sharp skew chisel cut a small dovetail on the spigot for the chuck jaws to grip firmly onto.

When there is solid and full support on the base of the dovetail shaping of the outside can commence.

Remember that there will be no solid surface to cut until a point at the widest diameter - i.e. the corners so beware of the ghosting effect.

The corners need to be kept sharp so cuts should be made from the base upwards. Be very careful not to turn off the sharp edges at the corners of the blank. When this stage is complete sand and finish the outside.

### **Turning 2:**

Remove the blank from between centres and fit the chuck onto the lathe. Fit the spigot into the jaws and ensure that the work is centred, by checking the three points as described above. There will be a small mark left on the tailstock end of the blank from the earlier tail support, bring up the same tail support and centre it onto this mark before fully tightening the jaws. Gently begin to cut away the waste triangular section of wood at the tailstock support using a small spindle gouge. Remember that you will again be cutting opposing edges of the blank initially and viewing the ghosting effect of these edges. Leave the tail support in place for as long as possible. When the outer section is flat, cut away the centre cone and remove the tail support. The work is then held solely on the chuck jaws by a fairly small spigot! I personally would use gentle cuts with a parting tool to delineate the outer circumference limits of the hollowing to be done and begin the hollowing process. As when working on the outside shaping, carrying out the hollowing; be very careful not to cut away the outer points of the bowl. These should remain sharp and pointed on the finished item, as should the edges of the bowl. The ghosting effect will be evident around the outer upper edges during the whole of the hollowing and you will not be cutting a solid surface until probably a third of the way down the walls of the bowl, at which point apart from being very careful with your fingers and knuckles, the hollowing process is the same as for any other bowl. This design lends itself well to a full flowing curved inner base that can be finished with a small round nose scraper prior to sanding.

### **Finishing:**

Sand and finish to your own preference whilst still on the lathe. Once again being very wary of the pointed spinning edges at the top of the bowl, support it by hand and part-off from the chuck. Sand and finish the outer base by hand.

### **Safety Note:**

Throughout this item I have mentioned the ghosting effect that will be evident during the making of this bowl. I do urge you to be fully aware of this danger and to wear protective head shield and facemasks at all times. During initial turning the only solid edge to be seen will be that running around the centre of the blank, and this will be the points on the corners of the work. Remember, red is never a nice colour to see on a turned piece of work, especially if that red comes from your knuckles!



**A 5-Sided Bowl** Turned by Nigel Maddocks  
(February 2014)

**Examples of 3-Cornered Bowls**

