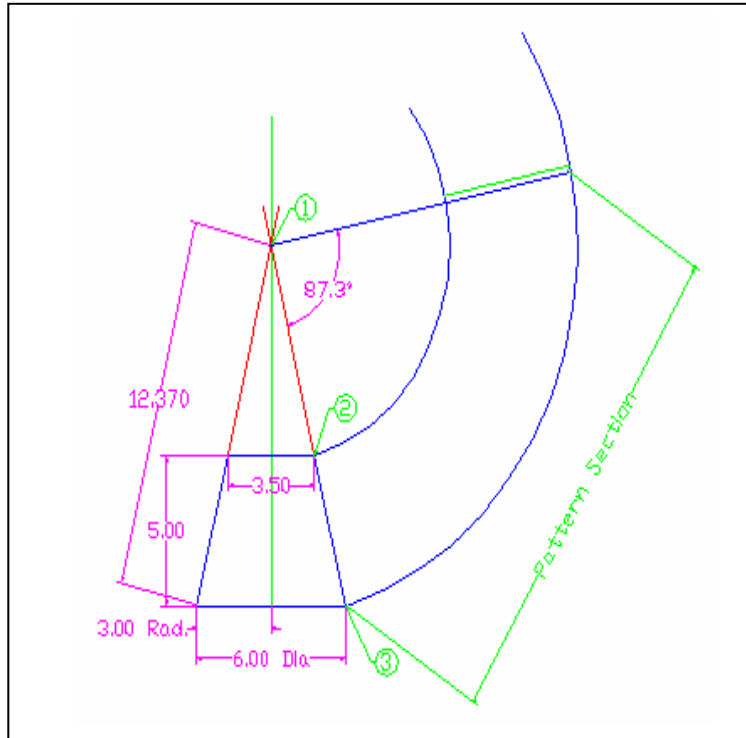


Creating a Pattern to make a Cone

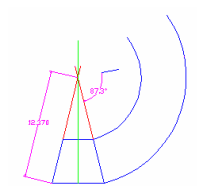
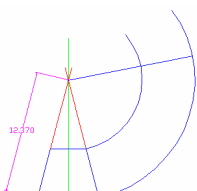
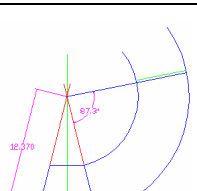
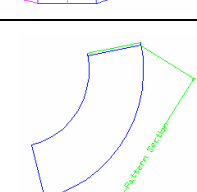
(Frustum of a Cone)



Compliments of:

Bob Bartelme
Backwoods Tin &
Copper, LLC

Step By Step Instructions	Step Visual Aid
1. Draw the shape you want to make. Example: A cone with a 6" diameter base, a height of 5 inches and a top diameter of 3.50 inches.	
2. Draw a Center Line through the Cone extending well above the cone. (Ex. Green Perpendicular Line). TIP: You can calculate the length of the Center Line you will need by: A. Subtract Small Diameter from the Large Diameter (Ex. $6 - 3.5 = 2.5$) B. Multiply the Vertical Height of the cone by the Large Dia. (Ex. $5 \times 6 = 30$) C. Divide the results of B by the results of A (Ex. $30 / 2.5 = 12$ inches) (This tip submitted By Robert Stone)	
3. Draw Extension lines from the 2 sides of the cone intersecting the Center Line. (ex. Red Lines)	
4. Using a compass or Trammel Points draw 2 arcs or circles centered from the intersection point (#1 on drawing) and the two corners of the cone (#2 and #3 on the drawing)	
5. Measure the length of one of the intersection lines from the intersection point (#1 on drawing) to the bottom corner of your cone (#3 on drawing). In this example, the length is 12.370 inches. Write this number on your drawing.	

6. Divide the Radius of the large Diameter of your cone by the length of the intersection line measured in step 5. In this example the calculation would be 3.00 divided by 12.370 with the results being 0.243 (Note: this number will always be less than 1).	$\begin{array}{r} 0.243 \\ 12.370 \overline{) 3.50} \end{array}$
7. Multiply 360 (the number of degrees in a full circle) by the results of your calculation from step 6. In this example, $360 \times 0.243 = 87.3$. This is the number of degrees of a circle that you will need to make the cone.	$\begin{array}{r} 360 \\ \times .243 \\ \hline 87.3 \end{array}$
8. Using a protractor centered on the intersection point (#1 on drawing) and zeroed out on the intersection line (#1 to #3 on drawing), mark off the number of degrees calculated in step 7. (Ex. 87.3 degrees).	
9. Draw a line from the intersection point (#1 on drawing) through your mark from the protractor to the outer circle or arc.	
10. Add your seam allowance to one of the sides of the pattern.	
11. This section of the drawing is now your pattern. Be sure to include the seam allowance and any allowance for burrs and rolled edges.	

Additional Tips

1. Use a large piece of paper such as brown craft paper or to aid in drawing a more accurate drawing, purchase a pad of Easel Paper from your local office supply store. Buy the type that has the 1 inch ruled squares printed on it.
2. Cut out the pattern slightly larger than the actual size and glue it to your pattern stock using re-positional spray glue that you can purchase at your local office supply store or some hardware stores. This way you only have to make your final cut once.
3. Peel off the paper from your pattern if you wish to keep your patterns in the more traditional way and use a scribe to scratch an identifying name or number onto the pattern stock. Or you can leave the paper on the pattern stock and mark it using a pen, pencil or Sharpie.