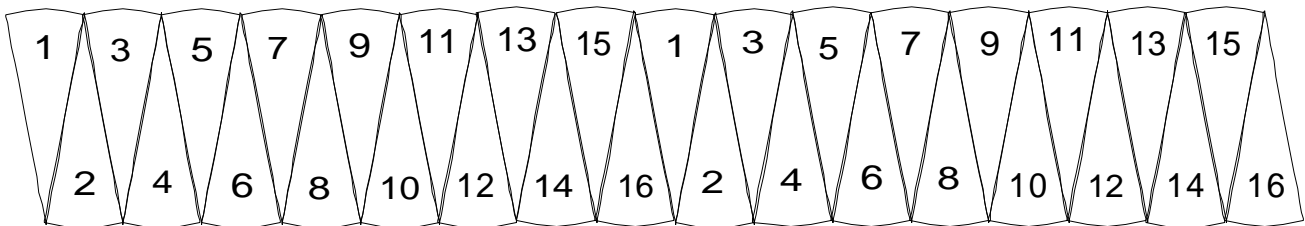
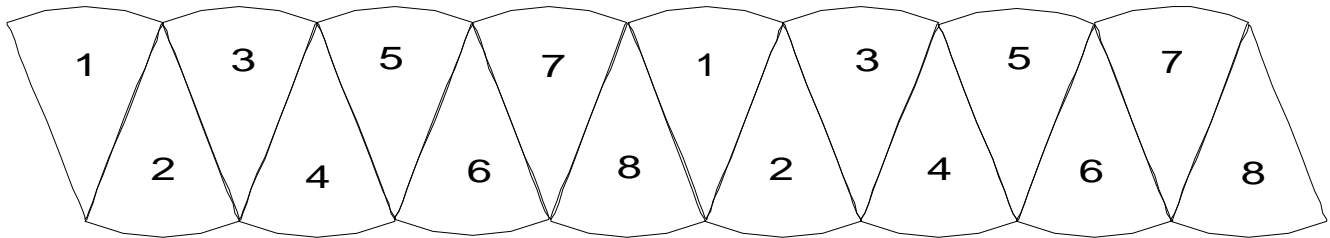
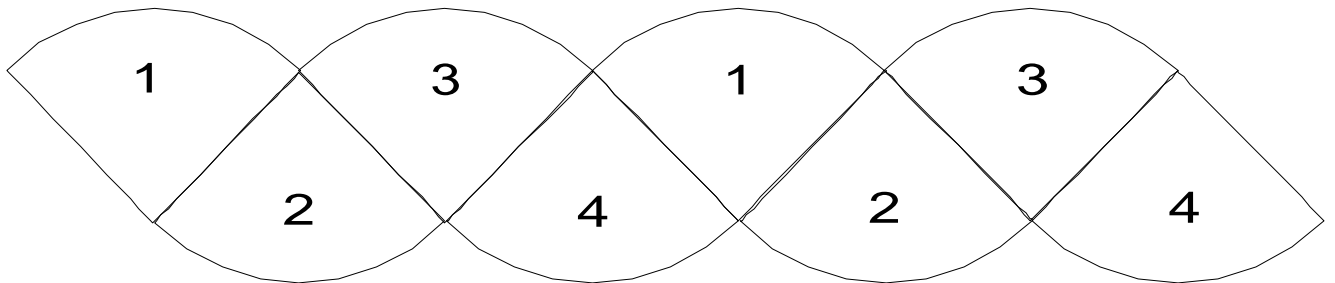


Cut the circle into a number of equally spaced circular sectors. Re-arrange the parts and lay out the areas of two circles at a time as shown in the next three figures below. The more numerous the parts the more the re-arrangements take on the shape of a rectangle. Now anyone should appreciate the visual aspect of a limit process where the number of sector parts becomes infinite. At the same time, each individual sector part becomes very small in terms of its left-right width, while the top-bottom height of each sector part approaches the radius r . The area of the final rectangle is really the product of the circumference with the radius.



$2\pi r$

The area of the rectangle is: $2\pi r \times r = 2\pi r^2$

Since this represents the area of two circles, the area of one circle is:

$$A = \pi r^2$$