

2.5.3 Construction of an Archimedean Spiral

The plane curve traced by a point which moving uniformly away and uniformly around a fixed point is called an Archimedean Spiral. The linear distance travelled by the point during one revolution is called pitch or lead.

The Archimedean Spiral is used in the construction of cams, threads, scroll shocks, etc.

The construction procedure for an Archimedean spiral is explained below.

- Draw a circle with O as center and radius equal to the given pitch. Divide the circle with any number of equal parts, say 12. Name the dividing points as 1, 2, 3,, 12. (Figure 2.60(a))
- Divide radius O-12 into the same number of parts as that of the circle and again name the dividing points on the radius as 1, 2, 3,, 12. (Figure 2.60(b))
- With O as center and O1, O2, O3 as radii, draw arcs which intersect the radial line O1 at point a, O2 at point b, O3 at point c, and so on. (Figure 2.60(c))
- Draw smooth curve passing through the points O, a, b, c, and 12 to get the required spiral. (Figure 2.60(d))

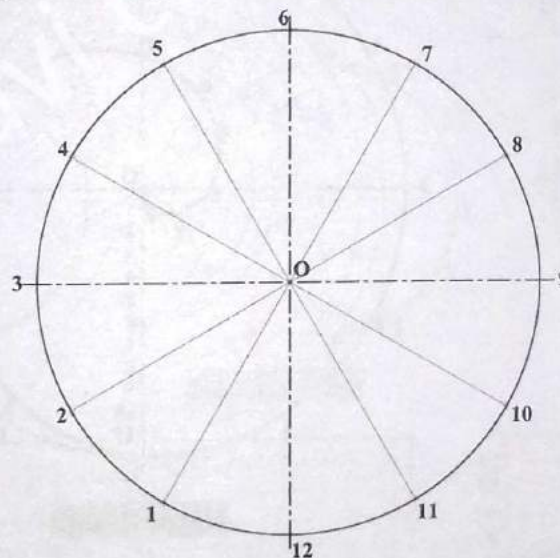


Figure 2.60(a)

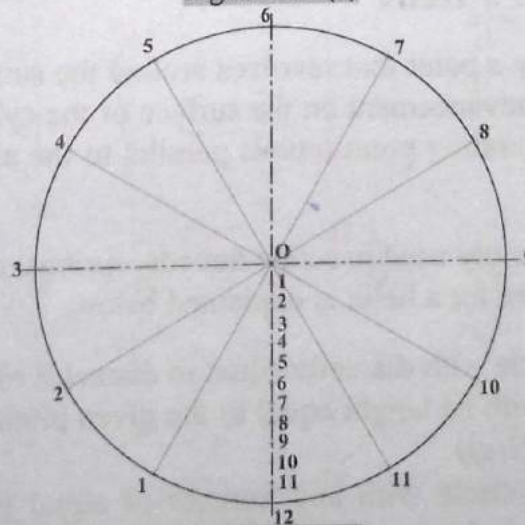


Figure 2.60(b)

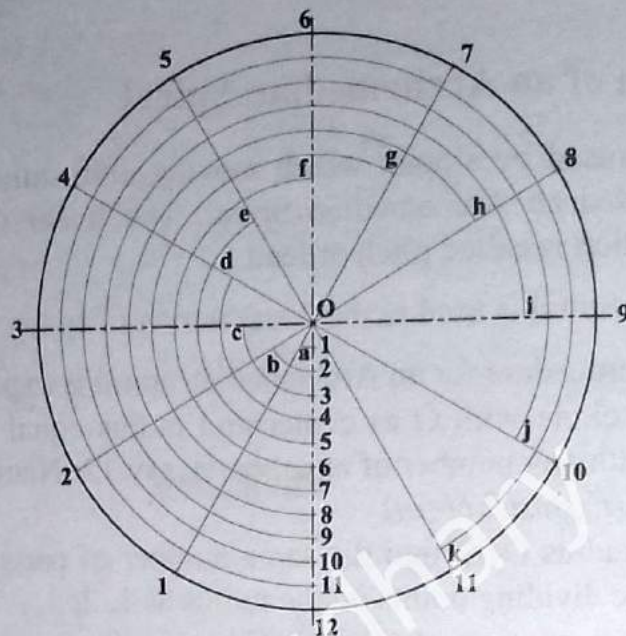


Figure 2.60(c)

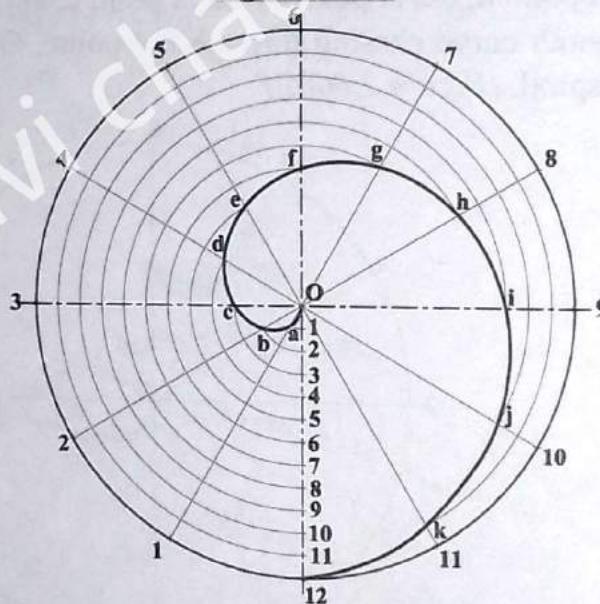


Figure 2.60(d)