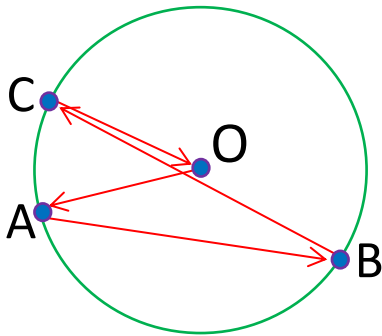


The journey around the circle takes a longer time than the journey across the chords and the radii.

### **Solution**



**Firstly, consider the journey around the circumference....**

**The formula for the circumference of a circle is  $C = 2\pi r$ . So the turtle must travel approximately 6.28 radii. The time is simply the distance divided by the constant**

**speed, so the time is directly proportional to the distance.**

**Now consider the journey across the 2 chords and 2 radii....**

**The longest chord in a circle is the diameter. Thus the maximum possible length of a chord is 2 radii in length. So the 2 chords from A to B, and from B to C, cannot be longer than 4 radii in total.**

**The journey from C to O and from O to A is 2 radii in total.**

**Therefore the longest possible distance the turtle can travel in this case is 6 radii.**

The turtle journey along the circumference is more than 6 radii and will take more time than the journey along the chords and radii, given that the turtle travels at the same speed on both journeys.