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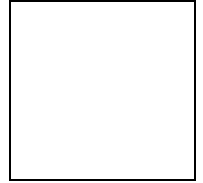
## NLSC MATHEMATICS DRILLS 2025

## TOPIC : CIRCLE PROPERTIES

### Time; 45 minutes

A landscape architect is designing a circular flowerbed for a new park. The flowerbed has a radius of 10 meters. Within the flowerbed, they want to create a section for roses. This rose section will be a sector of the circle, with a central angle of 60 degrees.

## Tasks

1. The architect needs to put a low fence around the rose section. Calculate the length of fencing needed for just the curved edge of the rose section.
2. Calculate the area of the sector that will be planted with roses.
3. A straight path, represented by a chord, will connect the two endpoints of the rose sector's arc. Calculate the length of this path.
4. The architect is considering a slightly different design. Instead of a 60 degree sector, they are thinking of using a 90 degree sector, how much more fencing will they need compared to the original 60 degree design?
5. If the fencing costs $5 per metre, what will be the total cost of fencing for the original 60-degree rose section?
6. The architect also wants to install a sprinkler in the centre of the flower bed. The sprinkler has a range of 5 metres. What percentage of the entire circular flower bed will not be reached by the sprinkler?

*"The best way to learn mathematics is to do mathematics" – Paul Halmos*