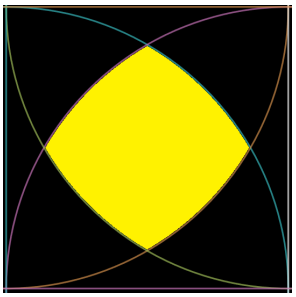
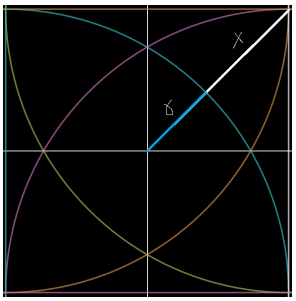
Submitted by: Nutan Nepal

1. The given diagram consists of a square of length 10 cm and arcs of four circle of radius 10 cm. Find the area of the largest circle which can be fit into the shaded region.



Solution:



Since the diagonal of the square is $10\sqrt{2}$ cm and the radius of each circle is 10 cm, we find that the maximal radius $r = 10 - \frac{10}{\sqrt{2}} = 10 - 5\sqrt{2}$. So the area of the required circle is $A = \pi r^2 = \pi(10 - 5\sqrt{2})^2 = 26.95$ cm^2. □