Circle placement in a circle

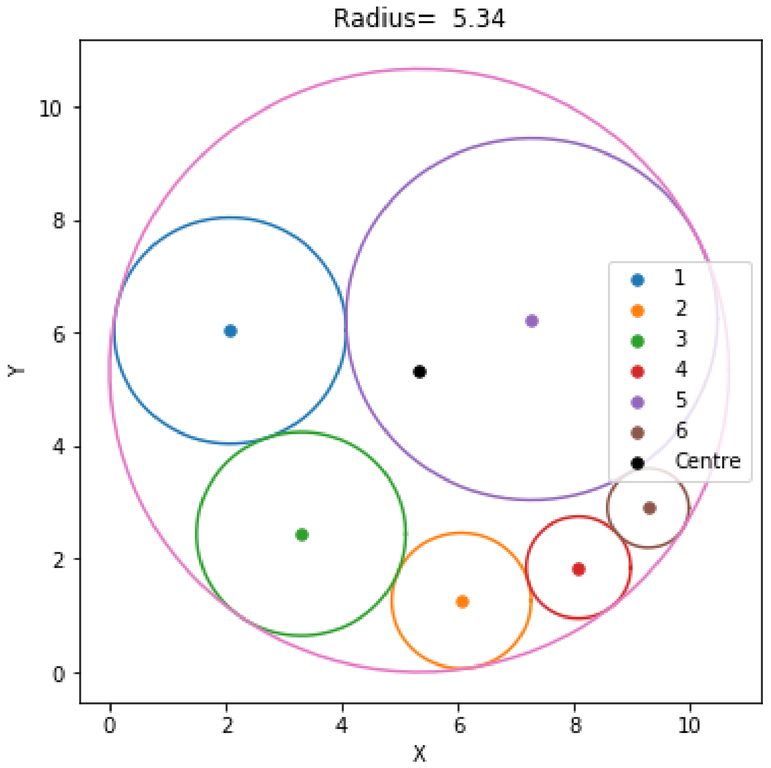
Solve the following optimization problem

Allocate N circles with known radiuses in a minimum surface circle without overlapping each other

$$\min \pi R^2$$

$$\forall_{i,j} \ \left(x_i - x_j\right)^2 + \left(y_i - y_j\right)^2 \geq \left(r_i + r_j\right)^2$$

$$\forall_i \quad (x_i - R)^2 + (y_i - R)^2 \leq (R - r_i)^2$$



Ex13B