(1) Pseudocode:

Algorithm: Will the inner triangle of a circle contains the center?

Procedure: Circle(N). Initial $C=0$

For $j = 1.2.\cdots, N$

For $i = 1.2.3$ do

$$X_i \sim U(-1,1)$$

$$Y_i = \begin{cases} \sqrt{1-X_i^2} & p=\frac{1}{2} \\ -\sqrt{1-X_i^2} & p=\frac{1}{2} \end{cases}$$

return $\{(X_i, Y_i) : i = 1.2.3\}$

If $X_1X_2 + Y_1Y_2 \geq 0$. and $X_1X_3 + Y_1Y_3 \geq 0$ and $X_2X_3 + Y_2Y_3 \geq 0$, do ~~then~~

$C = C+1$

return C.
