# Self defense strategy

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  | C |
|  |  | C | C |
|  | C | C |  |
| C | C |  |  |

Each cop/robber is safe in this placement.

# For C = 30, R = 29, grid = 10 x 10

## Cop dead

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | C | C | R |  | R | **C** | C |
|  |  | C | C | R | R |  |  | R | C |
|  | C | C | R | R |  |  |  | R | R |
| C | C | R | R |  |  |  |  |  |  |
| C | R | R |  |  |  |  |  | R | R |
| C | R | R |  |  |  |  | R | R | C |
| C | C | R | R |  |  | R | R | C | C |
|  | C | C | R | R | R | R | C | C |  |
|  |  | C | C | R | R | C | C |  |  |
|  |  |  | C | C | C | C |  |  |  |

**C** = only moveable cop

## Infinite loop

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| x | C | C | C | C | C | C | C | C |  |
| C | x |  |  |  |  |  |  |  | C |
| C | C |  |  | R | R |  |  |  | C |
| C |  |  | R | R | R | R |  |  | C |
| C |  | R | R |  |  | R | R |  | C |
| C |  | R | R | **R** |  | R | R |  | C |
| C | C |  | R | R | R | R |  |  | C |
| C | x |  | R | R | R | R |  |  | C |
| C | C |  | R | R | R |  |  | C | C |
| x | C |  | R | R | R | R |  | C | x |

**R** = robber move inside the area to escape its turns

x = blind spots (the area the robbers must avoid).

# Conclusion

No possible ways found to place the cops in large grid to catch the robber.