INSTRUCTIONS

Q1

The question has a scene where both solution is switched on with a button press and the correspond execution time has been provided to not the efficiency.

Q2

The problem is shown visually with a ball and a specified height. There are parameters given to be able to change in runtime and test the changes.
2 types of approach have been tried. The first approach has been commented in the code just for reference.

Q3

This question is also visualized with a board and certain UI button to test in runtime.

The following code can be made more efficient with adding more struct , hence decreasing amount of loop.
But this question has been done only with the provided details with a single exception of a Jewel Coordinate class.

All the possible improvem,ents that can be made are specified in the comments

Q4

This demo has a scene with 100 objects spawned randomly in a certain radius. The objects can be shuffled with the use of a button which deletes the previous objects and creates new one.

Also there is a switch which will spawn the player which will be disabled if there is already a player in the scene.