COMP329 — Robotics & Autonomous Systems — Assessment One

- You are required to write a robot program that will enable your robot to explore the arena in order to locate two red paper circles, placed at random locations on the arena.
- The robot will start from a known location (see figure), with the color sensor located at (x, y) coordinate (20cm,20cm) from the bottom left corner of the arena.
- The red circles will be pieces of red paper 5cm in diameter; they will not be placed within 10cm of the perimeter of the arena.
- To make life easier, you can use coloured waypoints (e.g., a blue strip of paper crossing the arena) at known locations, which can be detected by your robot to help determine the current location.
- On locating each red circle, the robot should display the estimated location on the LCD panel.
- On finding both circles, your robot should stop.
- Your robot should avoid crashing into the arena perimeter walls.
- You should:
  - Demonstrate the working solution (or as much as you were able to accomplish) to the demonstrator, who will make a note of all groups that demonstrate their code. Partial marks will be awarded for partial solutions. Demonstrating the solution will be worth 50% of the mark for this assignment.
  - Hand in a printout of your documented code, complete with the usual plagiarism forms, to the student office by the deadline. You may also choose to include a statement about division of labour within the group (e.g., that you all contributed equally). The code will be assessed in terms of elegance of solution and correctness. The code will be worth 50% of the mark for this assignment.