4.1 (60 points)
Bresenham’s line drawing algorithm is commonly used to draw a straight line between two points on a raster grid, such as pixels in images.

a) As the algorithm has not been discussed in the lecture, familiarize yourself with the algorithm.

b) Describe the algorithm in detail. Consider first only the simplest case where the slope is restricted between 0 and 1. Then explain the general algorithm for all slopes.

c) Write a program in C/C++ that uses the general Bresenham algorithm to draw a line between two points. Your main function should ask the user to provide the points. Display the points as well the resulting line.

4.2 (40 points)
A variant of Bresenham’s line algorithm is the midpoint circle algorithm for drawing a circle. Describe in detail how this algorithm works.