2004 Paper 12 Question 5

Computer Graphics and Image Processing

(*a*) We wish to produce two algorithms: one which draws the outline of a circle and one which draws a filled circle.

  (*i*) Describe an efficient algorithm which will draw a one-pixel wide outline of a circle of integer radius, R, centred on the origin. [10 marks]

  (*ii*) Describe the modifications required to your algorithm to make it draw a filled circle. [3 marks]

(*b*) Given a function `drawline(x1,y1,x2,y2)`, describe an algorithm for drawing a Bezier cubic curve to a specified level of accuracy using only straight lines. [7 marks]