

## 2001 Paper 11 Question 10

### Computer Graphics and Image Processing

- (a) Describe an algorithm to draw a straight line using only integer arithmetic. You may assume that the line is in the first octant, that the line starts and ends at integer co-ordinates, and that the function *setpixel*( $x, y$ ) turns on the pixel at location  $(x, y)$ . [8 marks]
- (b) Describe Douglas and Pücker's algorithm for removing superfluous points from a line chain. [10 marks]
- (c) Under what circumstances would it be sensible to employ Douglas and Pücker's algorithm? [2 marks]