Brac University
Department of Computer Science and Engineering
CSE423: Computer Graphics
Assignment 01

Answer all the following questions:

1. For a line segment from A(2,5) to B(-2,-5) -

   a) Using the Midpoint line drawing algorithm, compute all the final pixels of the original zone. Show the present value of d and Δs (derivatives (d updating)) at each stage. [5]

   b)Using the DDA line drawing algorithm, compute all the pixels. Show all the steps at each stage. [4]

2. A screen has a resolution of 2560 × 1440 and a frame rate of 75 fps.

(a) Calculate the total number of pixels in a single frame. [2]

(b) Find the time taken to generate one frame at 75 frames per second. [2]

(c) A GPU can process 75,000 pixels per millisecond. Determine whether the GPU can render one entire frame within the required time to maintain 75 fps. [2]