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(16, 17) to B(-10, -7) -

   a) Using the Midpoint line drawing algorithm, compute the first 10 pixels. Show the present value of d and Δs (derivatives (d updating)) at each stage. [5]

   b)Given two endpoints A(2, 4) and B(10, 5), using the DDA line drawing algorithm, compute all the pixels. Show all the steps at each stage. [4]

1. A screen has a resolution of 2340 × 1080 and a frame rate of 67 fps.
   a. Calculate the total number of pixels in a single frame. [2]
   b. Find the time taken to generate one frame at 67 frames per second. [2]
   c. A GPU can process 82,000 pixels per millisecond. Determine whether the GPU can render one entire frame within the required time to maintain 67 fps. [2]