BRAC UNIVERSITY

Department of Computer Science and Engineering

Quiz 02
Duration: 35 minutes

Semester: Spring 2025
Full Marks: 20

CSE 423: Computer Graphics

Name:	ID:	Section:

Answer **all** the following questions.
Figures in the right margin indicate marks.

1.	A viewing window has its top left corner at (20, 20). The window is 40 units tall and its width is 20 units wide. Using the **Cyrus-Beck algorithm**, clip the line segment, (5, -30) to (-10, 10) if needed (if it partially crosses the window). **[7]**	
2.	A point (5, 5) needs to be reflected about the line, $y = \sqrt{3}x - \sqrt{3}$ (i) Here, why do we reflect on the x-axis when trying to reflect it about a line? **[2]** (ii) Is this an affine transformation? Explain. **[2]** (iii) Write the full order of matrices for this point's transformation. **(You do not need to do the multiplication part) [2]** Which properties are preserved in scaling and rotation? **[2]** A point has been transformed to (2, 9) by first uniformly scaling it about a point (5,5) by 5, translating it by (-7, -10), and lastly rotating it clockwise 90^o about a point (-3,-4). Write the inverse composite matrices order to find the original point. **(You do not need to do the multiplication part) [5]**	