Tu-K
Computer Graphics Test 2 - November 2015

QUESTION ONE

a Using diagrams, explain the following types of 2D linear transformations.

i) Scaling
ii) Shearing
iii) Rotation
iv) Reflection

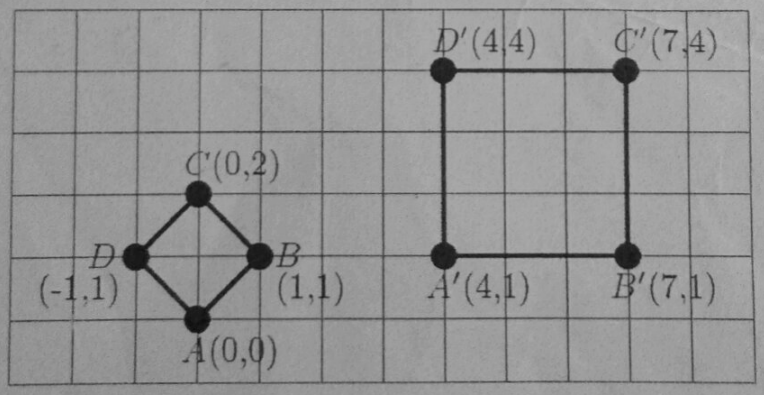
QUESTION TWO

a Why are matrix representations used to describe point transformations in computer graphics? - accurate

b Describe how to represent three different 2D transformations as matrices.

c Explain how to derive a sequence of transformations to achieve the overall effect of performing a 2D rotation about an arbitrary point.

Consider the following figure:



d Give a matrix, or product of matrices, that will transform the square *ABCD* into the rectangle *A'B'C'D'*.

e Show what happens if the same transformation is applied to *A'B'C'D'*.

QUESTION THREE

a) Distinguish between lighting, Illumination and shading.
b) List and explain the types of light sources. - object model - uses ambient, diffuse
c) Discuss shading and illumination models.
d) Explain concepts of i) Ray Tracing ii) Radiosity