Assignments of Advanced Computer Graphics

Assigned homework #2

5.2

Prove that two successive 2D rotations are additive:

$R(\theta\_1)\cdot R(\theta\_2)= R(\theta\_1+\theta\_2)$

5.9

Consider a line from the origin of a right-handed coordinate system to the point P(x, y, z). Find the transformation matrices needed to rotate the line into the positive z axis in two different ways, and show by algebraic manipulation that, in each case, the point P does go to the z axis. For ache method, calculate the sines and cosines of the angles of rotation.

a.   Rotate about the y axis into the (y, z)plane, then rotate about the x axis into the z axis.

b.   Rotate about the z axis into the (x, z)plane, then rotate about the y axis into the z axis.

Submission:

Report(word/pdf)

File name: Student ID_name_hw2

e.g. 116034910001_张三_hw2

Email for homework submission: cg_sjtu@126.com

Successful submission will receive reply like "Your homework of computer graphics is received."

Attention: Late submission will be scored less grade.