November 27, 2012

Computer Graphics
Exercises 1

Zadanie 1:
Write matrices that transform in 3-d coordinate axis as follows:

1. $M(x) = y$, $M(y) = z$, $M(z) = x$
2. $M(x) = y$, $M(y) = x$, $M(z) = z$

Are they rotations ? If so write a rotation axis and rotation angle.

Zadanie 2:
Write 3 different rotations transforming axis x into $y : M(x) = y$ in the form:

1. rotation axis and angle
2. matrix

Zadanie 3:
Observer moves on a halfline for and at a given time $t > 0$ is at $[0, 1, t]^T$ looking all the time in direction of origin of coordinate system.

Write matrix that transforms world coordinates into observer coordinates in which view direction is equal to axis z and such that axis y points upwards.

Zadanie 4:
Observer moves on a unit circle on the plane:

1. $y = 0$
2. $y = 1$

looking all the time in direction of origin of coordinate system.

Write matrix that transforms world coordinates into observer coordinates in which view direction is equal to axis z and such that axis y points upwards.