

# MAS.490: Introduction to Game Design

## *Problem Set #5*

Due October 10, 2002 at 3pm. Send problem sets to [orwant@media.mit.edu](mailto:orwant@media.mit.edu).

1. Implement the rest of your adventure game. I'll send feedback on your design by this Sunday to help.
2. Suppose you're creating a first-person shooter, and the player runs toward a tree that is 100 feet high and 1000 feet away, occupying 50 pixels of screen height. In the next timeslice, the player moves one foot closer to the tree. What scaling matrix (or quaternion, if you prefer) should be applied to make the image of the tree grow in size?
3. Suppose you're creating a first-person shooter, and the player is turning left just as he jumps on a springboard that catapults him upward. If he turns left by one degree per timeslice, that's a rotation through the X axis of +1 degrees. If the springboard catapults you upward by ten degrees per timeslice, that's a rotation through the Z axis of +10 degrees. What rotation matrix (or quaternion, if you prefer) describes the apparent motion of an object in the player's field of view?