Human RayTracer!
Part 1: Generate a ray

Suppose in camera (object) space, your eye is at the origin, looking toward –Z. The image plane is 1 unit away (Z = -1 plane), and on the image plane are the four corners LL = (-1, -1), LU=(-1,1), RL = (1,-1), RU=(1,1). (90 degree FOV camera) Suppose we want to render a 200x200 image, what's the ray (in "**camera-space**") for pixel at location (50,100) starting from LL? (For simplicity, ignore the 0.5 offset to the center of pixel)

And what is the ray in "**world-space**" if the camera points toward –Y (by rotating around X for -90 degree) and is located at (0, 2, 0)? (looking down your feet) (Hint: you can construct the "**camera2world**" transform for both **eye** AND **direction**)

Part 2: Intersect objects

Suppose we have an ellipsoid transformed from unit sphere by scaling along X-axis by factor of 5, and the ellipsoid is located at origin. What is the ray in the ellipsoid's "**object-space**"? What is the t-value for intersection?(assuming 1.01 ~= 1) The intersection point (in object-space)? And the intersection point in world-space? (Hint: you need both **object2world** and **world2object**), Normal of intersection in object space and world space?