1) Given a point with pixel coordinates \((p, q)\) in an \(m \times n\) image, construct the ray in camera space through the pixel for an orthographic projection specified in the usual way (left, right, bottom, top, near, far).

2) What is the “teapot in the stadium” problem for acceleration grids?

3) Give pseudo-code for checking if two axis-aligned bounding boxes intersect.
4) Give pseudo-code for checking if a ray with origin $\vec{x}_0$ and direction $\vec{d}$ intersects a sphere with centre $\vec{c}$ and radius $r$.

5) If a ray with direction $\vec{d}$ hits a surface with unit-length normal $\hat{n}$ at point $\vec{x}$, what is the reflected ray?

6) Given a $4 \times 4$ transformation matrix and a 3D direction vector $\vec{d}$, how do you compute the transformed direction?
7) How do we define the orientation of an ordered list of four points in 3D? (just give one definition)

8) What is the “depth complexity” of a pixel in an image?

9) Suppose a BVH of axis-aligned bounding boxes has been built on a set of \( n \) points. Give recursive pseudo-code for efficiently finding if any point lies below the plane \( y = 0 \).
10) How can you check if the line segment between points $\vec{p}$ and $\vec{q}$ intersects a plane through point $\vec{r}$ with normal $\hat{n}$?

11) Describe a set of $n$ points where an acceleration tree structure, built by splitting the space a node occupies in half, would have depth $O(n)$.

12) Describe a physical effect in light transport that raytracing doesn’t capture (without extra work).