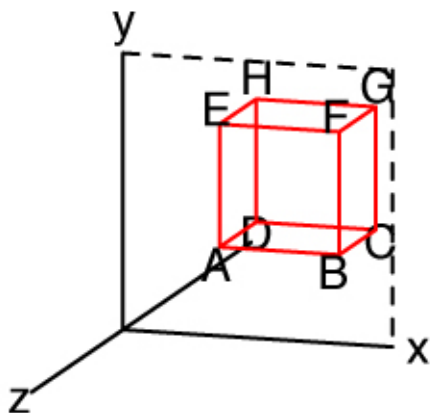


The viewer's eye is 8 units back from the picture plane.

The viewer is looking at a cube on the other side of the picture plane. The front and back of the cube are parallel to the picture plane, and the top and bottom are parallel to the "floor".

1. What are the coordinates for the viewer's eye?
2. If the corner of the cube which is (to the viewer) the bottom, left, front corner has coordinates  $(2, 2, 4)$ , and if each edge of the cube is 4 units long, find the 3D-coordinates of the other seven corners of the cube.

Here's a sketch, and you can also look at the model in class to help you out:



3. Use the perspective theorem to find the images of the 8 corners in the picture plane.
4. Draw the cube on graph paper.
5. Lines which are perpendicular (or orthogonal) to the picture plane are called *orthogonals*. See where all your orthogonals intersect!