Suppose we set up an ortho matrix \( M \) using the function call `mat4.ortho(M, -2, 2, 0, 2, 1, 3)`. Assume that this matrix is the only transformation applied to a scene.

1. Write out the matrix

\[
\begin{bmatrix}
1 & 0 & 0 & 0 \\
\frac{1}{2} & 0 & 0 & 0 \\
0 & 1 & 0 & -1 \\
0 & 0 & -1 & -2 \\
0 & 0 & 0 & 1
\end{bmatrix}
\]
2. What position does the vertex $(0, 1, -3, 1)$ map to? Is it discarded during clipping?

$(0, 0, 1, 1)$ It is not discarded (it's on a clipping plane).

3. What position does the vertex $(1, 1, -2, 1)$ map to? Is it discarded during clipping?

$(\frac{1}{2}, 0, 0, 1)$ It is not discarded.

4. Based on your answers above, how do you think WebGL determines which object is closest to the camera for hidden surface removal?

Small values are considered closer to viewer (that includes negative values, so a depth -5 is closer than a depth of 1).