Perspective correct interpolation
Perspective correct interpolation

- In pipeline, we find barycentric coordinates in 2D screen space
- but not the correct object space barycentric coords
- these coordinates are okay for z-buffer test
\[ u = \frac{1}{2} u_1 + \frac{1}{2} u_2 \]
\[
u = \frac{1}{2} u_1 + \frac{1}{2} u_2
\]
Interpolation with screen space weights is incorrect

\[ u = \frac{1}{2} u_1 + \frac{1}{2} u_2 \]

Correct

Distorted
Perspective correct interpolation

Using screen space weights looks wrong for textures

[Heckbert and Morton, 1990]
Do we need to transform back to object space?

\[ u = \frac{1}{2} u_1 - \frac{1}{2} u_2 \]

\[ \mathbf{v}_{sc} = M_{vp} M_{pers} M_{cam} \mathbf{v} \]
Do we need to transform back to object space?

NO!

\[ u = \frac{1}{2} u_1 + \frac{1}{2} u_2 \]