Getting the Canonical Volume

- Shear the volume in X and Y directions
- Scale in X and Y and Perspective Normalization

\[ z_{\text{near}} = -1 \quad \text{and} \quad z_{\text{far}} = 1 \]

The Canonical View Volume

- Symmetric, 90° field of view, \( z_{\text{near}} = -1 \); \( z_{\text{far}} = 1 \)
- Also called Normalized Perspective View Volume
- Simplify clipper arithmetic
- Clip to a simple built-in set of boundaries (hw)

\[ x = \pm z \quad y = \pm z \quad z_{\text{near}} = -1 \quad \text{and} \quad |z| < |w| \]
The View Frustum

- Trivial accept/reject

![Diagram of the view frustum]

View Frustum in OpenGL

- `glFrustum(left, right, bottom, top, near, far)`
  - The frustum does not need to be symmetrical
- `gluPerspective(fovy, aspect ratio, near, far)` symmetrical

![Diagram of view frustum in OpenGL](image.png)
Back Face Culling

- Removes polygons facing away from the viewer