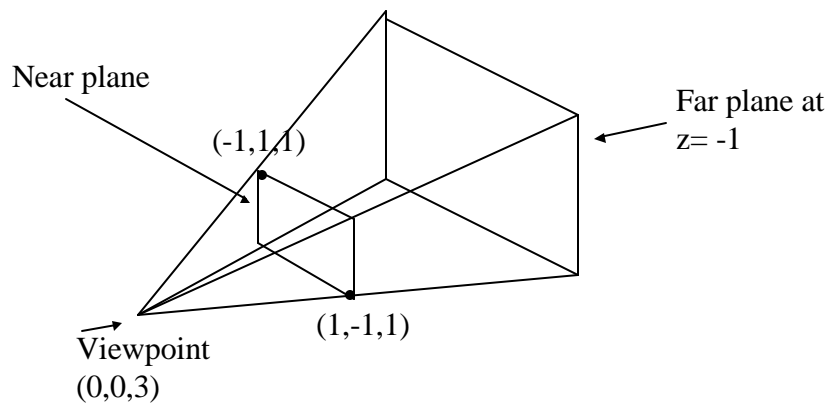


Perspective Projection

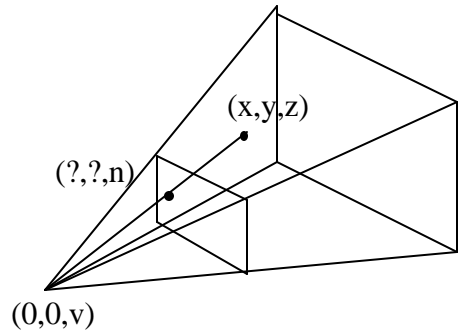
CS155: Fall 2001

Perspective Projection: Project 3 Frustum



Perspective Projection

Find intersection of line and plane



- Line: $P + \alpha D$:
 $P=(0,0,v)$ & $D=(x,y,z-v)$
- Plane: $z=n$
- $\alpha = (n-v)/(z-v)$

Perspective Projection: Mapping

$$(x,y,z) \rightarrow (\alpha x, \alpha y, \alpha z) \text{ where } \alpha = (n-v)/(z-v)$$

IS NOT a linear map

$$(x,y,z,1) \rightarrow (\beta x, \beta y, \beta z, \gamma) \text{ where}$$

$$\beta = (n-v) \text{ \& } \gamma = (z-v)$$

IS a linear map

Perspective Transformation

