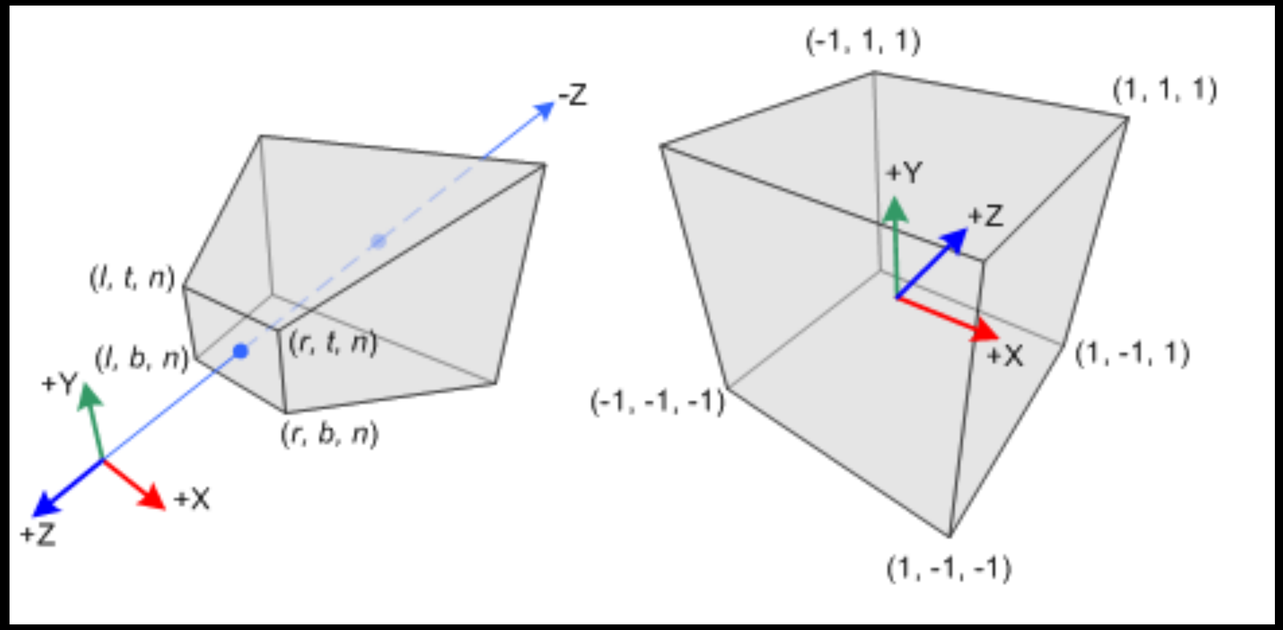
Perspective Projection

- P =

$$\begin{matrix} \frac{2n}{r-l} & 0 & \frac{r+l}{r-l} & 0 \\ 0 & \frac{2n}{t-b} & \frac{t+b}{t-b} & 0 \\ 0 & 0 & -\frac{f+n}{f-n} & -\frac{2fn}{f-n} \\ 0 & 0 & -1 & 0 \end{matrix}$$

for r = right, l=left, u=up, d=down, n=near, f=far planes defining the cube that is of interest



Perspective Projection

- Perspective projection matrices are often specified as field of view (fov) and aspect ratios instead:

$$P = \begin{bmatrix} f / a & 0 & 0 & 0 \\ 0 & f & 0 & 0 \\ 0 & 0 & (f+n) / (n - f) & 2fn/(n-f) \\ 0 & 0 & -1 & 0 \end{bmatrix}$$

for f = cotangent(fov / 2), a = aspect ratio