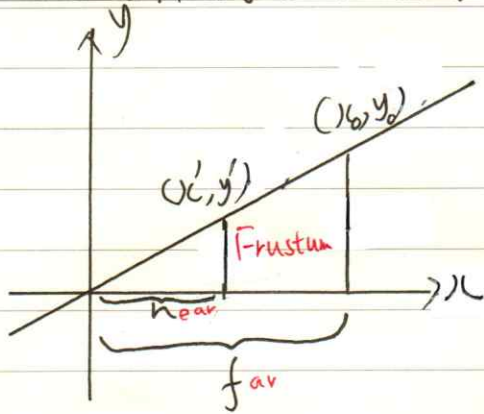


视锥体到长方体推导



$$\text{设 } y = kx.$$

$$\therefore y_0 = kx_0 = kf$$

$$y' = kx' = kn$$

$$\therefore \frac{y'}{y_0} = \frac{kn}{kf}$$

$$\frac{y'}{y_0} = \frac{n}{f}$$

$$y' = \frac{n}{f} y_0$$

推广到普遍情况:

$$\therefore \begin{cases} y' = \frac{n}{z} y \\ x' = \frac{n}{z} x \end{cases}$$

$$\therefore \begin{pmatrix} x \\ y \\ z \\ 1 \end{pmatrix} \times M_{\text{presp} \rightarrow \text{ortho}}^{(4 \times 4)} = \begin{pmatrix} \frac{n}{z} x \\ \frac{n}{z} y \\ \text{unknown} \\ 1 \end{pmatrix} \xrightarrow{\text{都乘 } z} \begin{pmatrix} nx \\ ny \\ \text{unknown} \\ z \end{pmatrix}$$