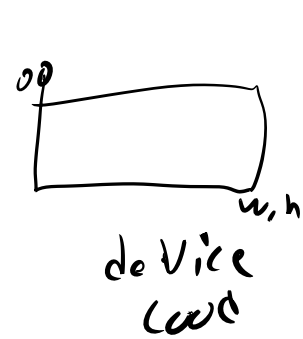


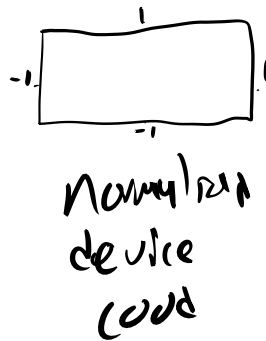


Raster

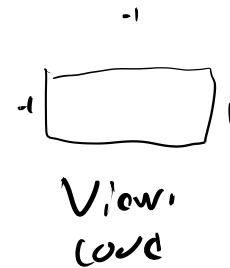
depth Fragments =



DDA



Viewport



Proj

aspect ratio

Perspective

illuminate [M/V]

[V][M]

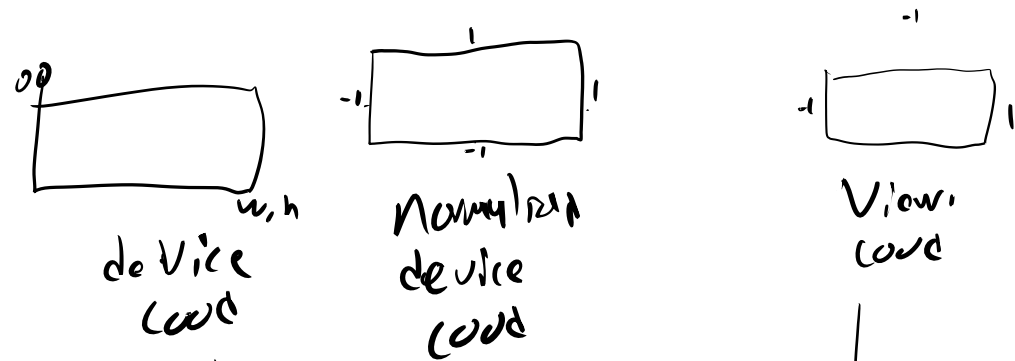
clip

Pt



Raster

depth Fragments =



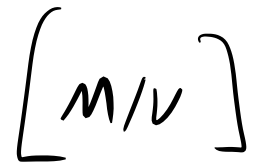
DDA

Viewport



Copy

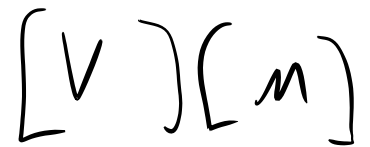
clip



norm

Pt

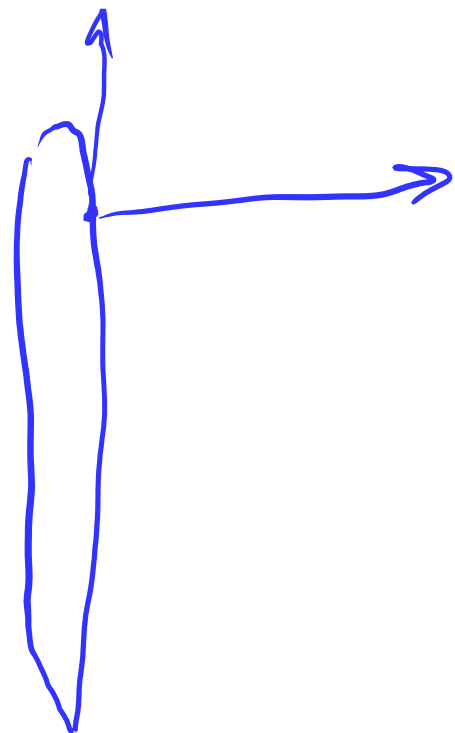
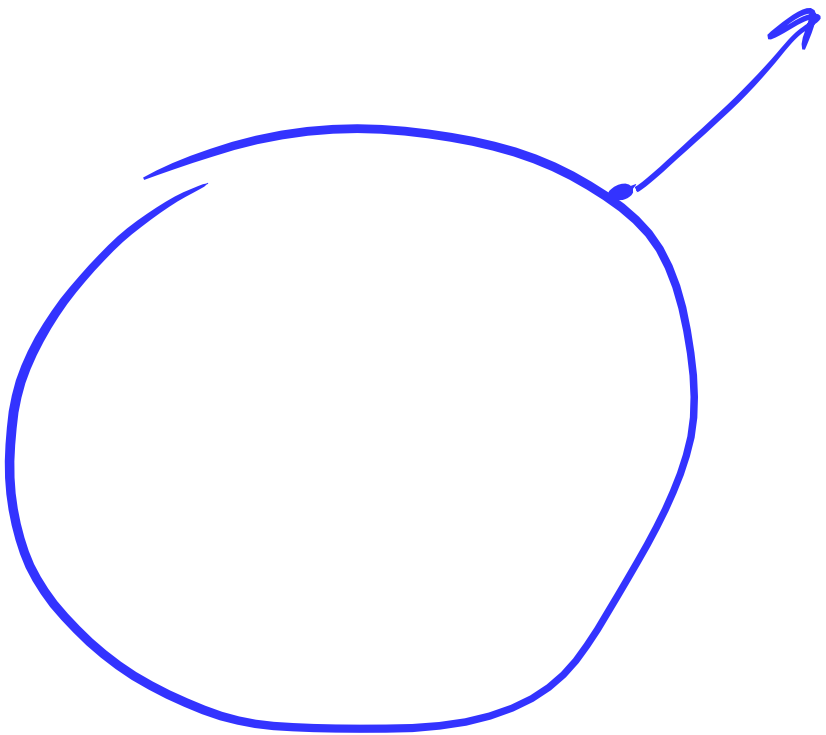
aspar
ratio Perspective



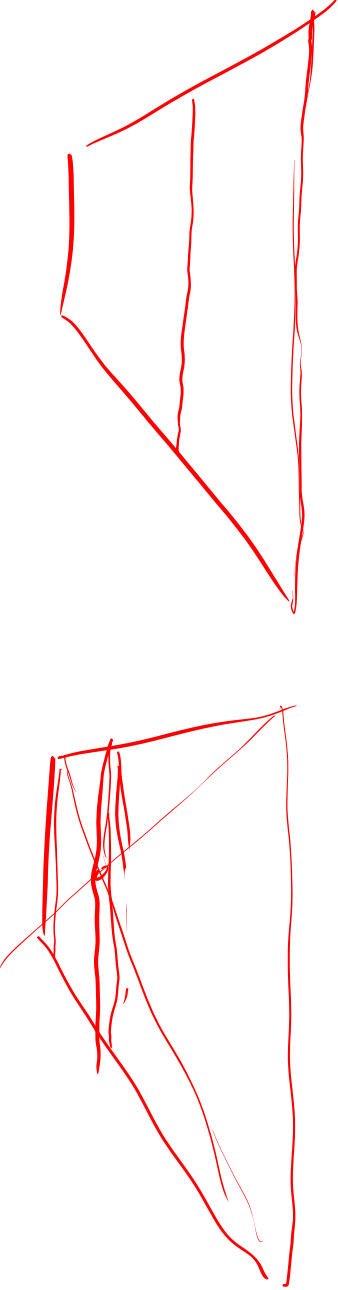
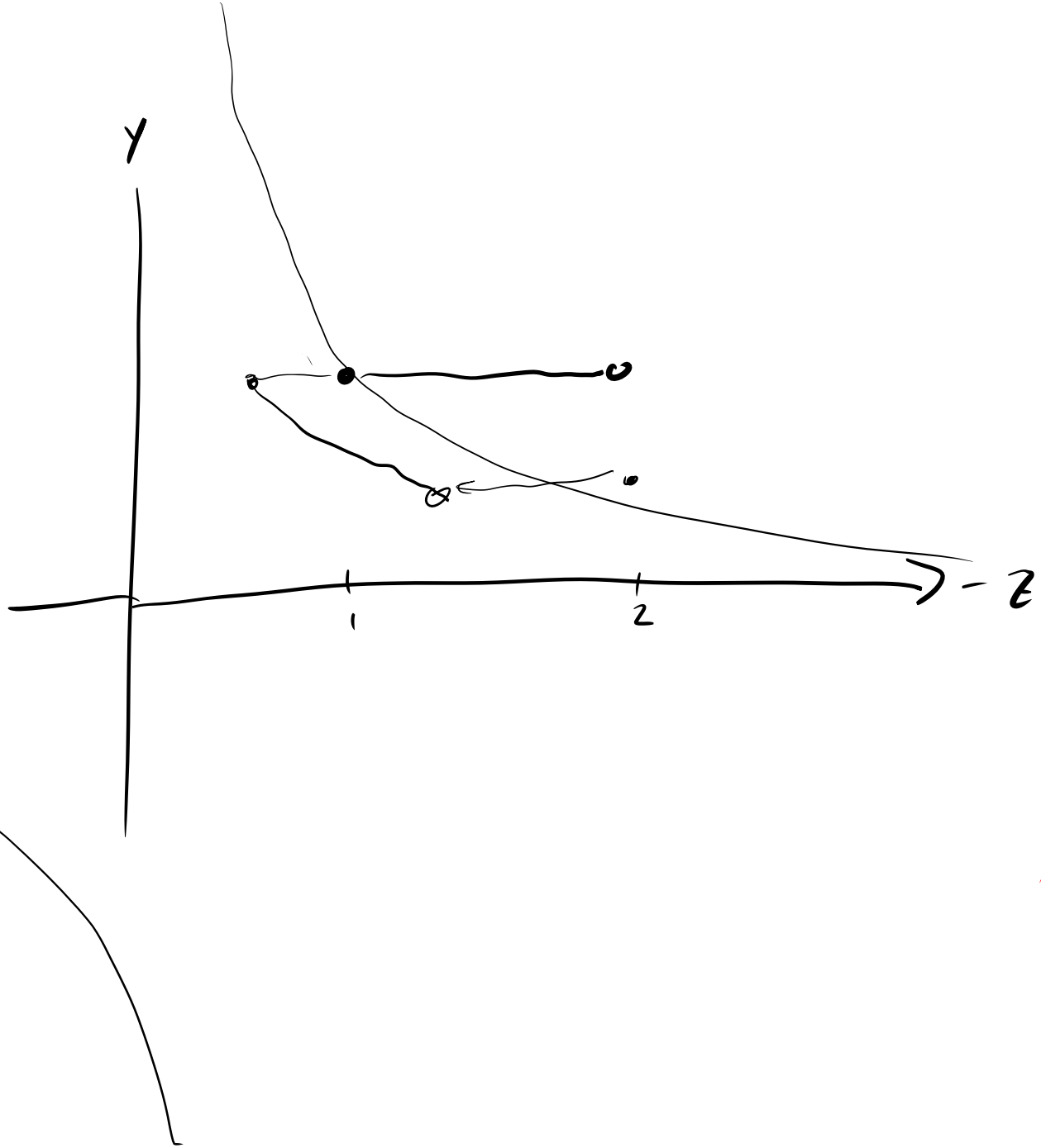
- Screen
- S_x
 - S_y
 - S_z
 - w
 - P_x
 - P_y
 - P_z
 - n_x
 - n_y
 - n_z

P

n



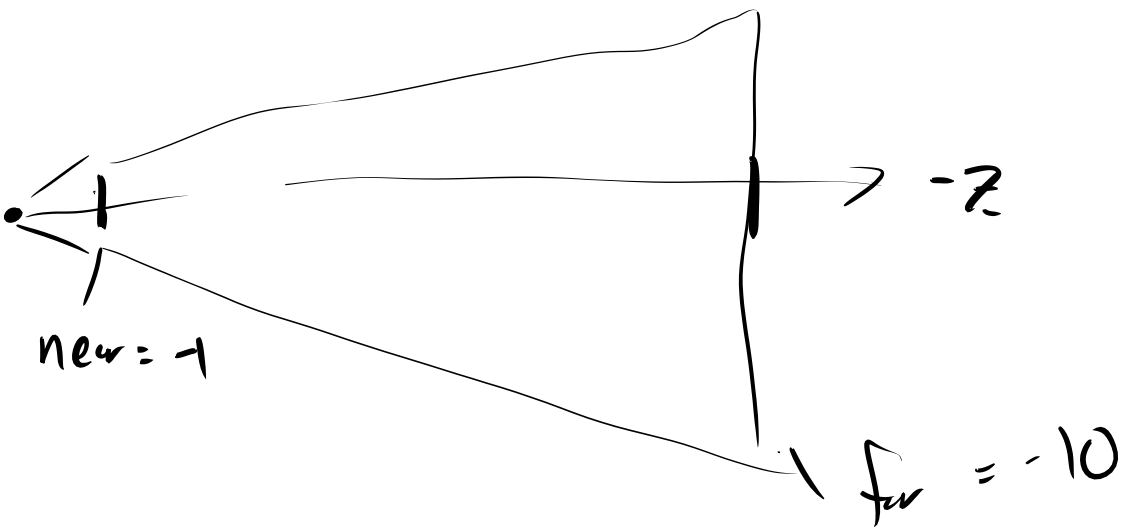
$x = \sqrt[3]{3}$
 $x = \sqrt[3]{-3}$



$$\frac{z'}{w'} = \frac{a \cdot z + b}{-z} = -a - \frac{b}{z}$$

$$-a - \frac{b}{-1} = 0$$

$$-a - \frac{b}{-10} = 1$$



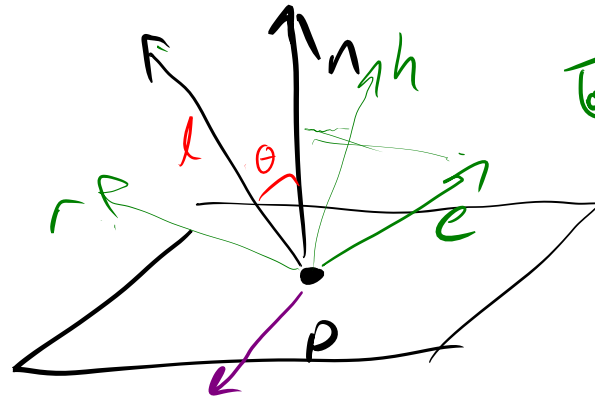


ambient light - no math

dot product = $\cos \theta$

diffuse - normal light

Lambert's law



L fudge (minnaert)

L more geom + math (Oren-Nayar)

$$h = \frac{l + e}{2}$$

$r = \text{reflect } e \text{ across } n$

Phong

Blinn

Beckmann

Cook-Torrance

— Specular Highlights

normal

light

eye

Can isotropic

reflection

Lighter color
x (diffuse)

Obiar color