

1) 2D clipping

141000 MATHS  
13720 CS086

we could set up a separate 2D viewing coordinate reference frame for specifying clipping window

systems use normalized coordinates in the range from 0 to 1

clipping is usually performed in the normalized coordinates

2) Basic Phong lighting model with equations

Ambient lighting referred as the natural lighting

similarly

$I_{\text{spec}} \propto \cos^n \theta$

Total intensity  $I = I_a + I_d \cos \theta + I_s \cos^n \theta$

3) Apply homogeneous coordinates for translation via matrix representation



# The matrix representation Rotation & Scaling

$$P' = P E^T$$

$$\text{Translation } P' = \begin{bmatrix} x \\ y \\ 1 \end{bmatrix} + \begin{bmatrix} x_0 \\ y_0 \\ 1 \end{bmatrix}$$

$$\text{Scaling } P' = [S \cdot P]$$

$$P' = M_1 + P + M_2$$

$$\text{But } x = \frac{x_0}{n}, \quad y = \frac{y_0}{n}$$

$$\text{Translation } \begin{bmatrix} x \\ y \\ 1 \end{bmatrix} + \begin{bmatrix} x_0 \\ y_0 \\ 1 \end{bmatrix}$$

$$\text{Scaling } \begin{bmatrix} x' \\ y' \\ 1 \end{bmatrix} = \begin{bmatrix} \cos \theta & -\sin \theta & 0 \\ \sin \theta & \cos \theta & 0 \\ 0 & 0 & 1 \end{bmatrix} \begin{bmatrix} x \\ y \\ 1 \end{bmatrix}$$

4) Diff b/w Raster & Random Scan display

Raster scan

Random scan

1) produces jagged lines that are plotted as a discrete point

1) Random systems produce smooth lines drawing



static openGL functions

glutCreateWindow  $\rightarrow$  used to create a new window

$\rightarrow$  glutCreateWindow  $\rightarrow$  used to create another window within same window

$\rightarrow$  glutSetWindow - used to set a particular id for window

$\rightarrow$  glutPostRedisplay  $\rightarrow$  To display the window again & again, continuously until forcibly closed

$\rightarrow$  glutPopWindow  $\rightarrow$  works just like a menu in window

$\rightarrow$  glutMainLoop

$\rightarrow$  glut C

i) openGL visibility functions

a) OpenGL polygon filling functions

glPolygonMode;

glPolygonMode (GL\_FILL);



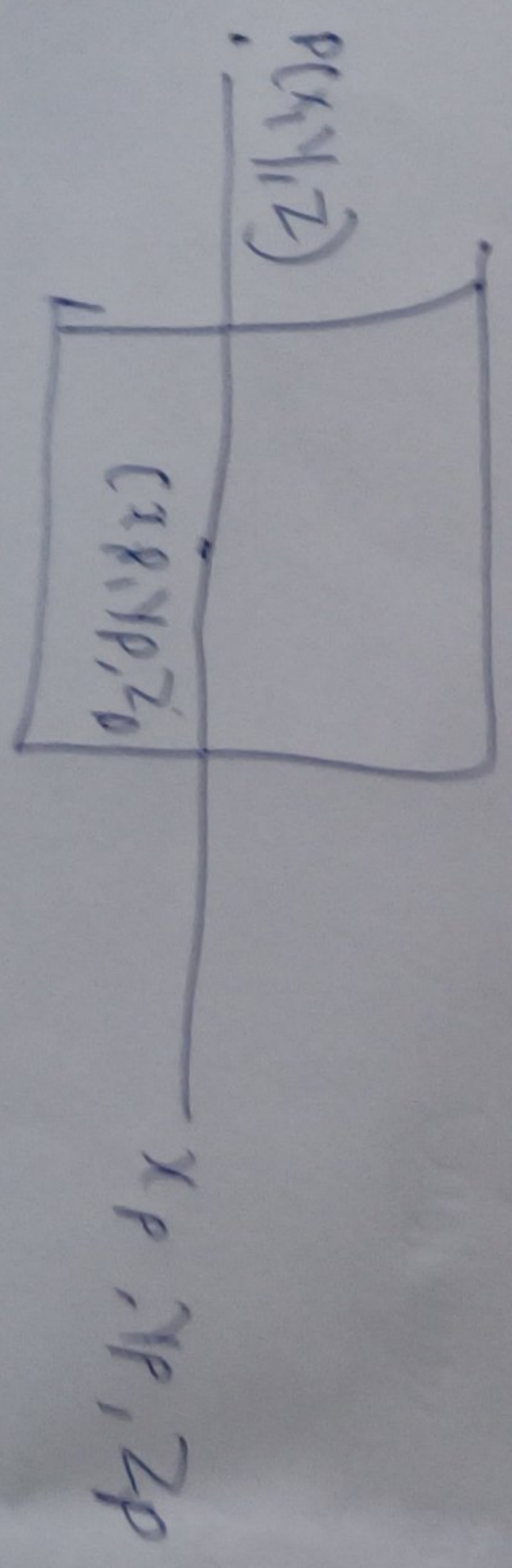
Depth really counts as  
 quantitative measure (but - subjective)  
 over some length, depth)

This works as measurement function  
 depth height and again better

of course (but, depth, that)  
 of course (but, depth, that)

a) open but depth function

7) with special case discussed with  
 probability



$$x' = x - (y - y_p) \text{ and}$$

$$y' = y - (y - y_p) \text{ and}$$

$$z' = z - (z - z_p) \text{ and}$$



$$m, n, p = 0$$

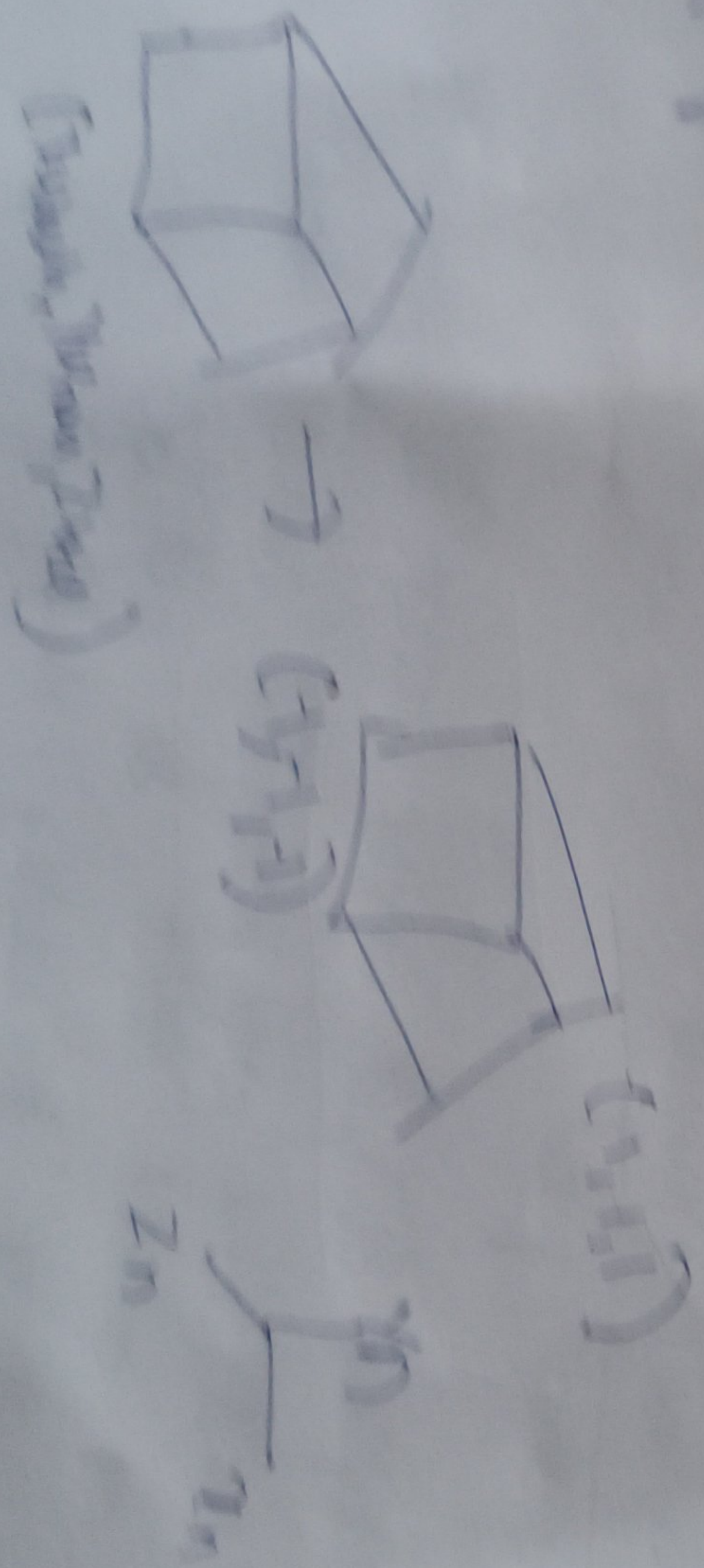
$$2p = 2 \left( \frac{2p^2p - 2p^2}{2p^2 - 2} \right)$$

$$2p = 4 \left( \frac{2p^2p - 2p^2}{2p^2 - 2} \right)$$

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$$2p = 1 \left( \frac{2p^2p - 2p^2}{2p^2 - 2} \right) \quad m, n, p = \left( \frac{2p^2p - 2}{2p^2 - 2} \right)$$

2) Explain construction for an elliptical prism.





are considered a unit  
in to asymptotic behavior  
in of the normal distribution  
in orthogonal unit

Moreover, note on:

$$\begin{bmatrix} 1 & 0 & 0 \\ 0 & 2 & 0 \\ 0 & 0 & 2 \end{bmatrix}$$

normal values  
normal - 3 units

→ normal - 4 units  
quasars - 4 units

represents Bayesian activity and its properties  
regard curve are parameterized curves  
are represented with the help of contour of  
points it is widely used in graphics  
and other industry



$$\sum_{k=0}^n a_k x^k(t)$$

$n \rightarrow$  polynomial limit

$x \rightarrow$  variable

$x \rightarrow$  model

we used the above model and formula  
 below where  $(n_x) + (n - x) = n - 1$  for  
 every point

$n =$  control points - 1

$x = 0 \dots 1$  (range)

$$\sum_{k=0}^n a_k x^k(t)$$

represent function polynomial

control points are represented above