Constructing Rays and intersection with a plane

Given: eye=(0,0,2), surface plane normal (0,0,1), surface plane equation: z=0 (distance plane to origin is 0 (a=0 as per slide 14))

For Image_plane_pixel (0,0,1)

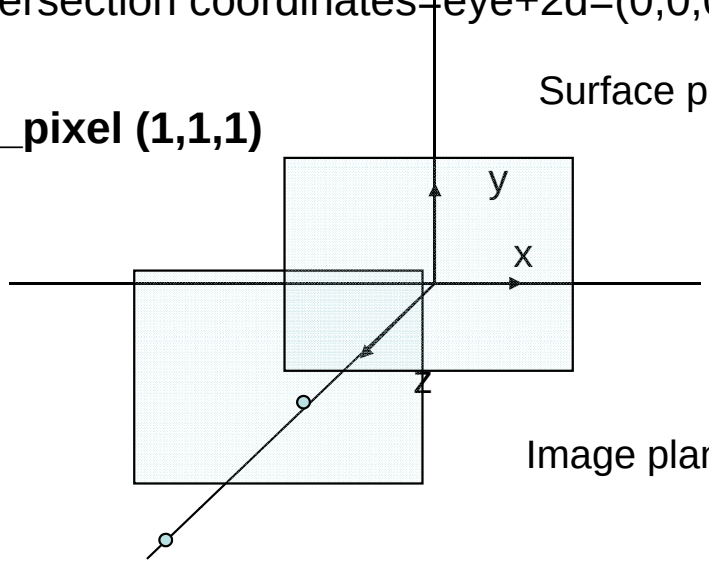
•d=pixelPos-eye= (0,0,-1), ray: eye+td = (0,0,2-t)

•Intersection (slide 14): (**eye** + *t* **d**)·**n** – *a* = 0 → $t = \frac{a - \mathbf{eye} \cdot \mathbf{n}}{\mathbf{d} \cdot \mathbf{n}}$

•t=-2/-1=2, Intersection coordinates=eye+2d=(0,0,0)

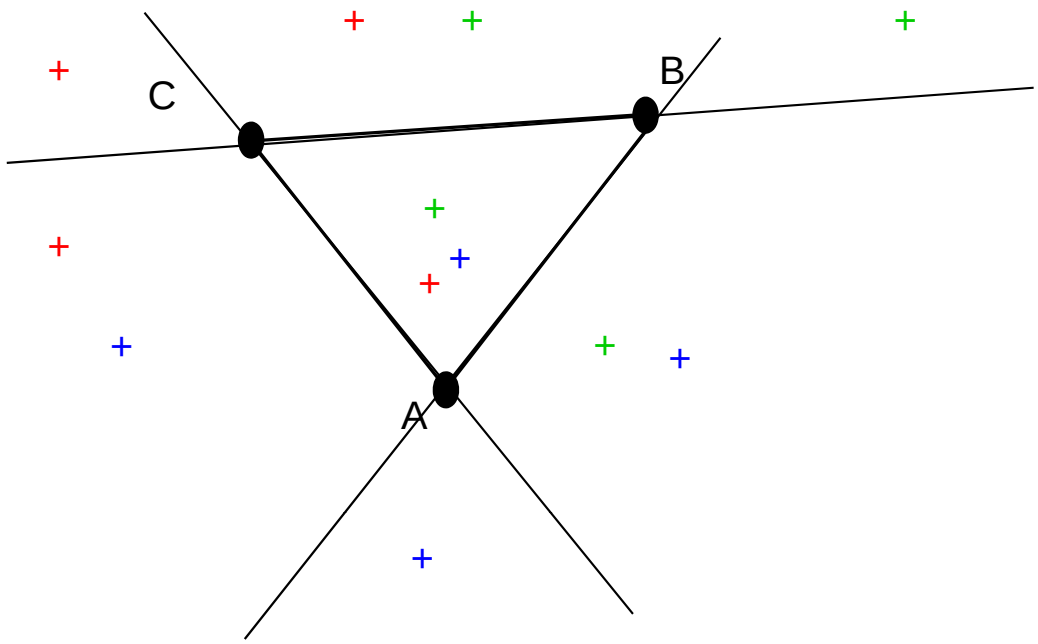
Redo with:

Image_plane_pixel (1,1,1)



Ray-Triangle Intersection

- Normal **n** = (B-A) × (C-A)
  - Sign of: ((B-A) × (**p**-A))·**n** and ((C-B) × (**p**-B))·**n** and ((A-C) × (**p**-C))·**n**



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