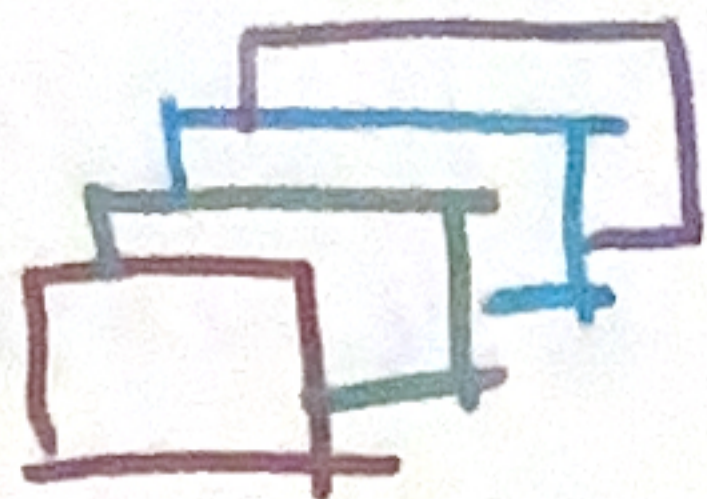


# COLORS



Color Image  
RGB

Each layer is 8 bits/px  
3 layers = 24px



RGBA Image with Alpha (transparency)  
4 layers = 32px



Gray Level Image  
8 bits/px



Binary Image  
1 bit/px

1 byte = 8 bits  
1 MB = ~~1024~~ <sup>1024</sup> byte  
1 MB = ~~1000~~ <sup>1024</sup> kilobyte

ex// RGB Image → 8 bits/pixel = 1 byte

600x480

$$\text{Size (MB)} = \frac{3 \text{ bytes} \times 600 \times 480}{1024} \times \frac{1}{1024} \rightarrow \text{Byte} \rightarrow \text{KB} \rightarrow \text{MB}$$

ex// Binary Image

600x400

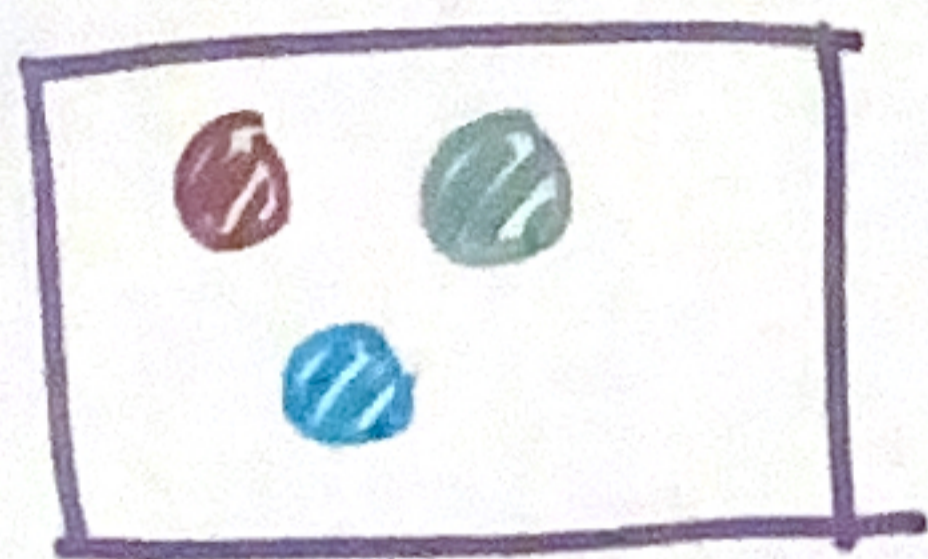
1 bit/px

$$\frac{600 \times 400 \times 1}{8} \times \frac{1}{1024} \times \frac{1}{1024} \rightarrow \text{Bit} \rightarrow \text{Byte} \rightarrow \text{KB} \rightarrow \text{MB}$$

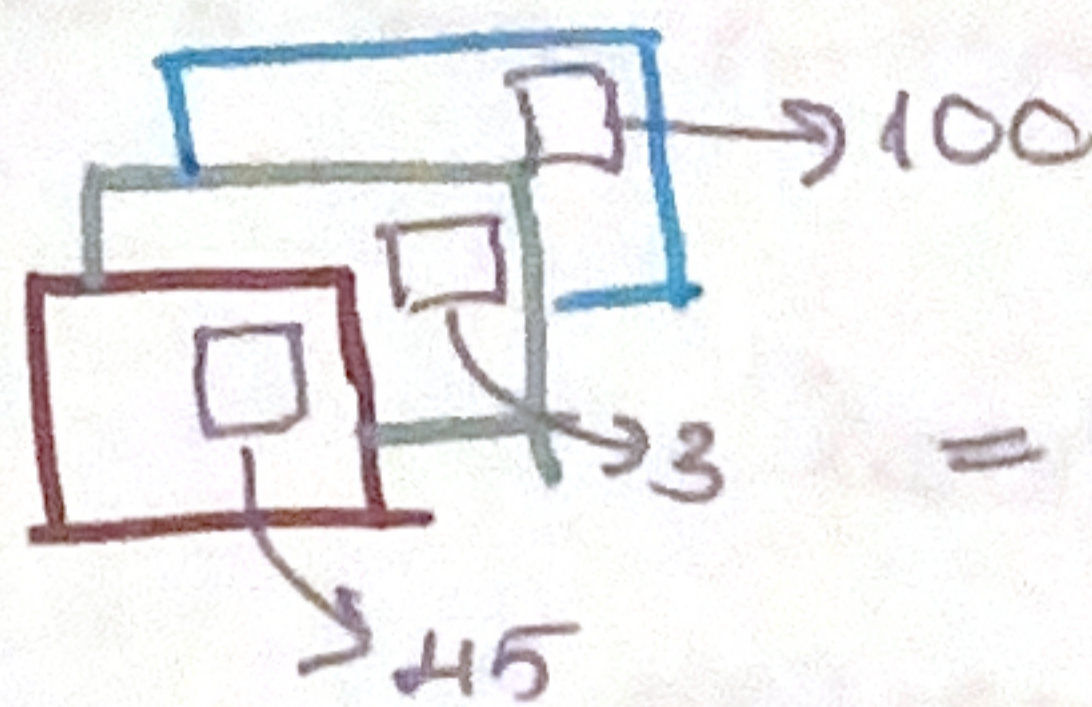
ex// HD Image (1920x1080)

RGB

$$\rightarrow 3 \text{ bytes} \times 1920 \times 1080 / 1024 / 1024$$



Pixel

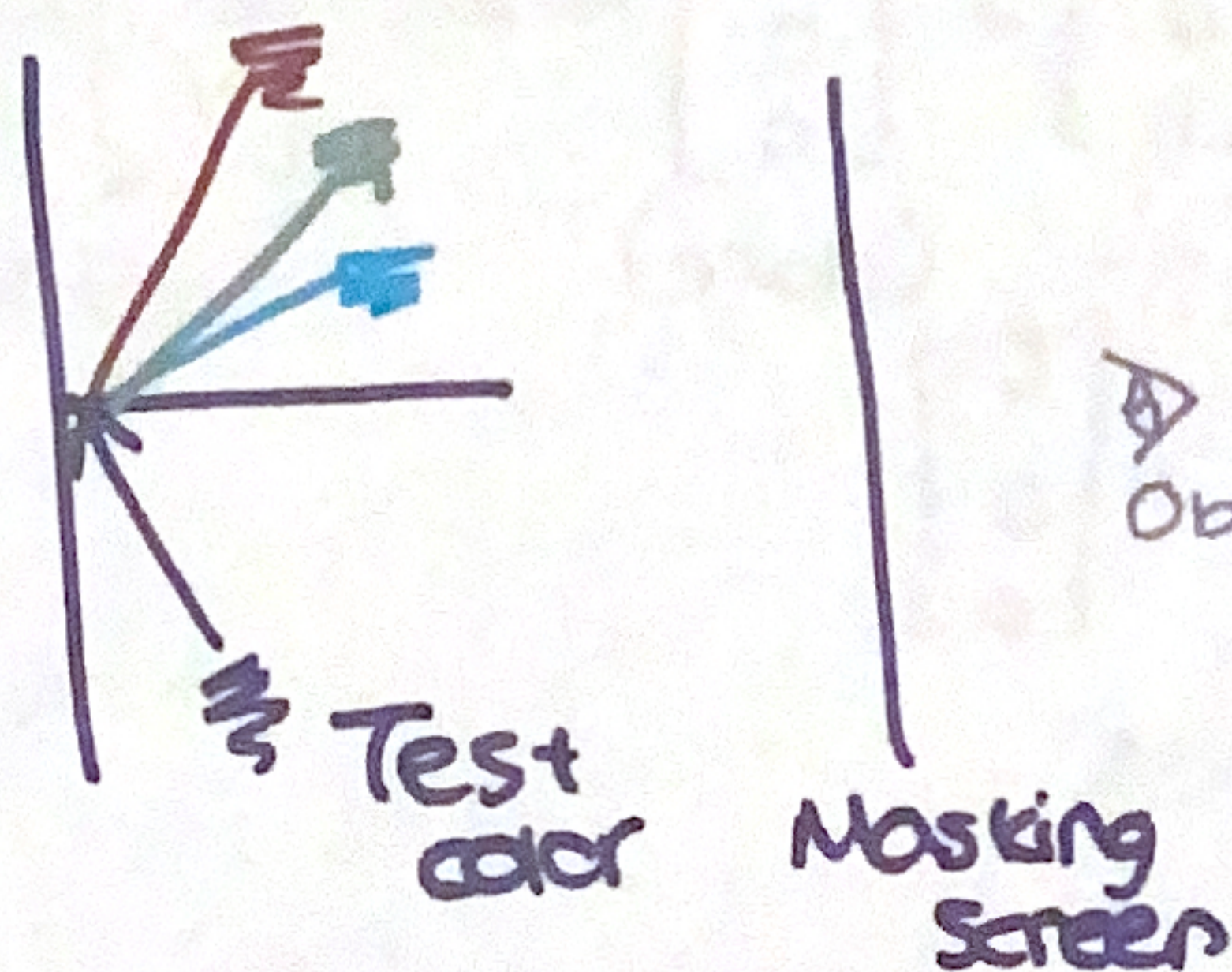


= we need a palette to answer!

390 → B

710 → R

## Colorimeter



UV VS IR

Observer

To define 3D perceptual space, observers match color of a given wavelength → lambda by mixing three other pure wavelengths  
phosphors of color TVs & other CRTs do not emit pure R, G or B light of a single wavelength.