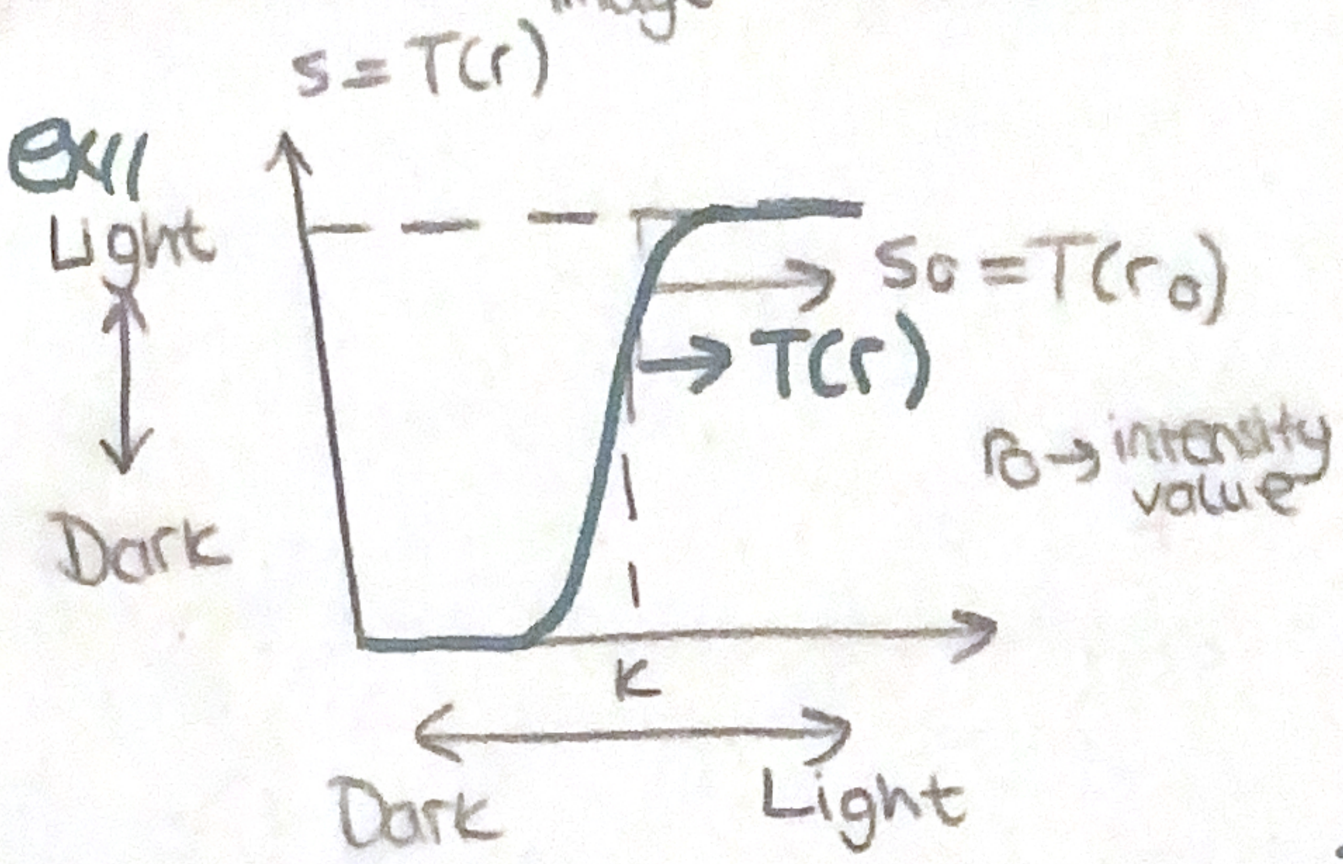
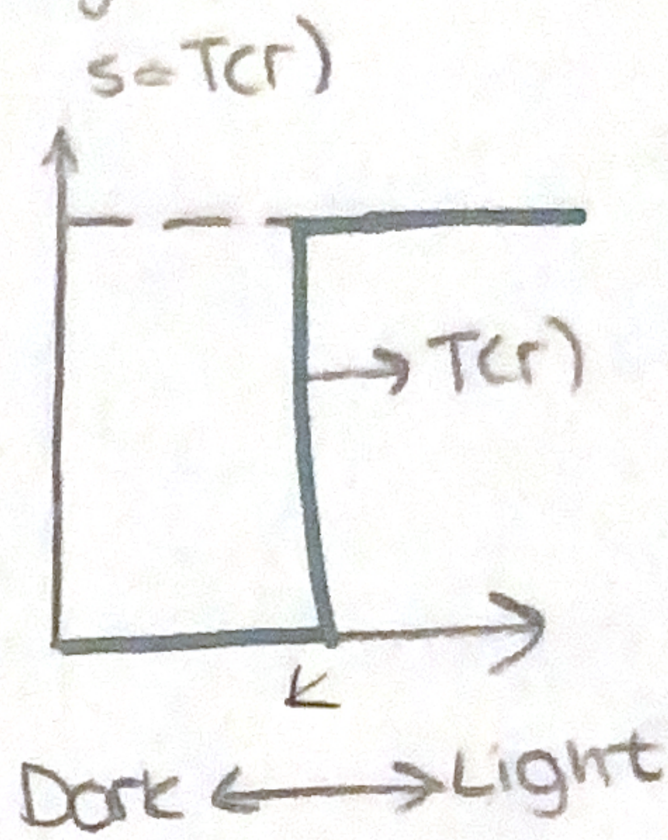
Intensity Transformations & Spatial Filtering

$g(x,y) = T[f(x,y)]$

- $g(x,y)$ → output image
- T → a func.
- $f(x,y)$ → input image

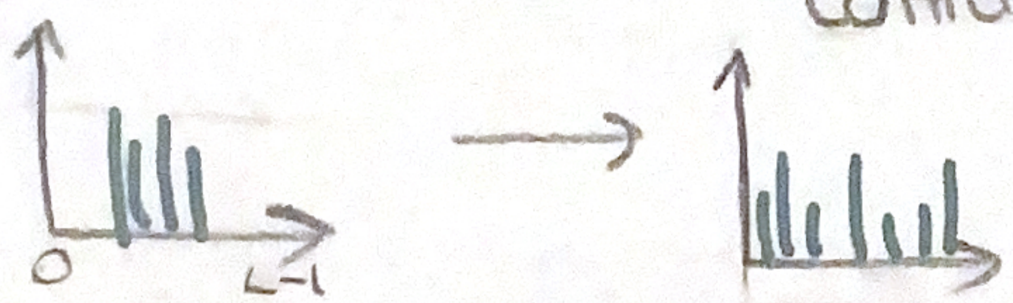
ex//





Contrast Stretching → Increasing Contrast

Thresholding Function



Basic Transformations

→ Image Negatives

$s = L - 1 - r$ (→ 255)

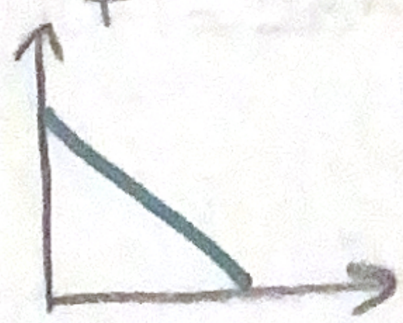
10	200
200	5

f

Neg. →

245	55
55	250

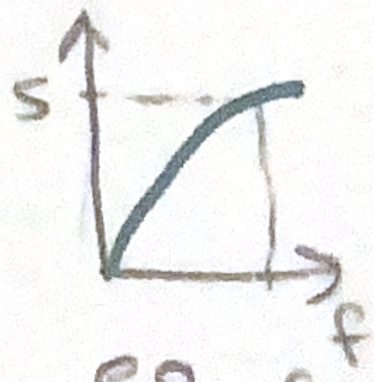
s



→ Log Transformation

Increases the brightness

$s = c \log(1+r)$

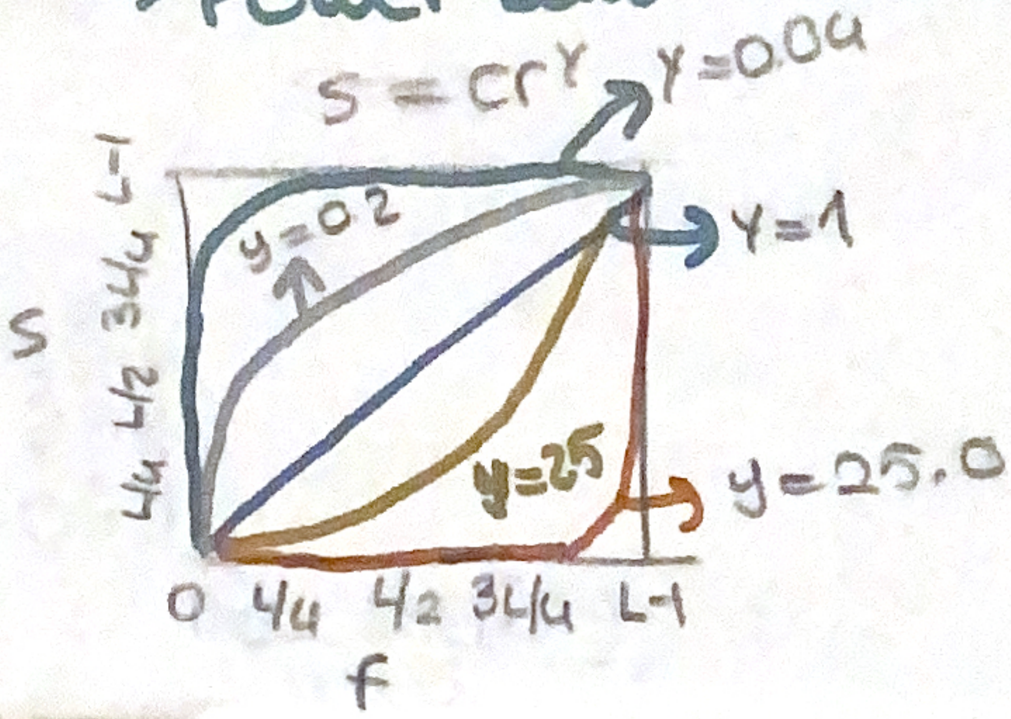
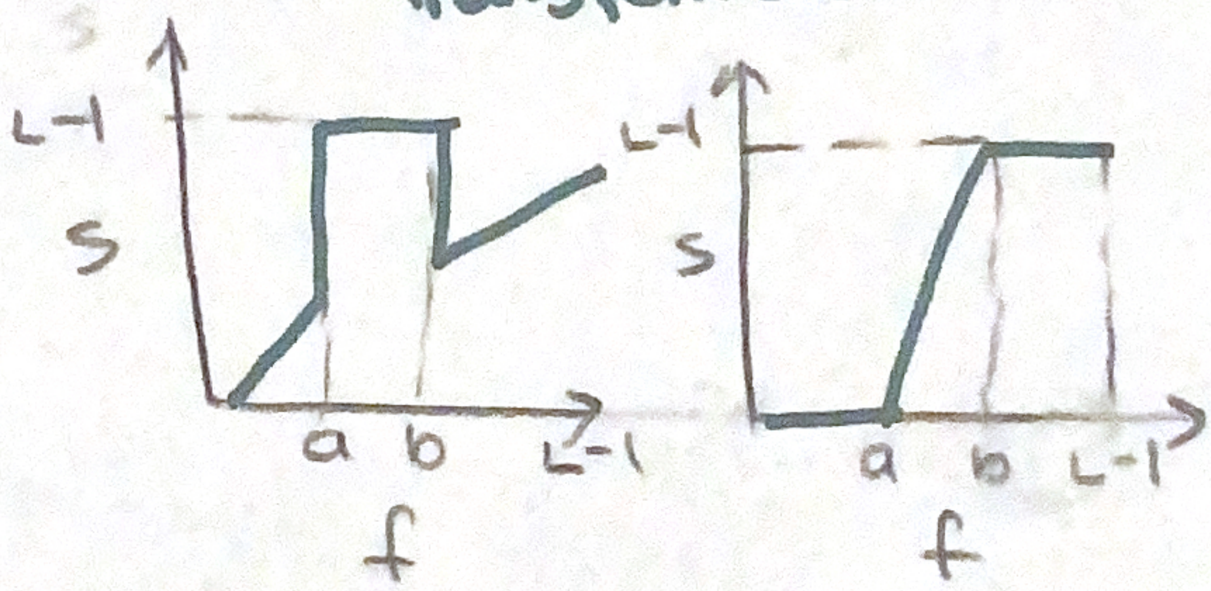


Expand the values of dark pixels in the image & compress higher level values.

e.g. $[0, L/4] \rightarrow [0, 3L/4]$

→ Power Law (Gamma) Tr.

$s = cr^{\gamma}$



→ Piecewise Linear Transformation