Colors

Monochrome - 2 colors
RGB scheme for monitors — additive primaries
CYM scheme for hardcopies — subtractive primaries

Schemes for reducing numbers of colors/grayscale

Grayscale - various intensities of white (closer to color than monochrome)
- higher resolution (used in spy satellites)

Want to make pixels small (.39mm → .28mm std)

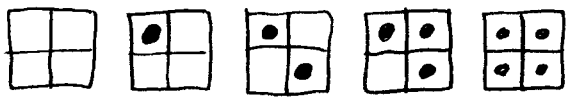
Halftones - newspapers
- series of black dots varying in size

How to print a color image using a B/W printer?

→ threshold value — above → black, below → white

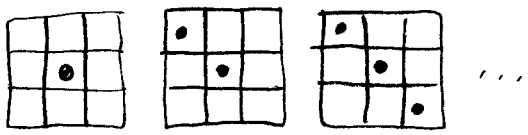
→ dithering - ordered dither - trade resolution for intensities

turn 4 pixels into 1



What if image is one pixel wide? (e.g. fonts)
- small details get cut to pieces

dithering patterns are square
- 10 colors → 3x3 and all 0s

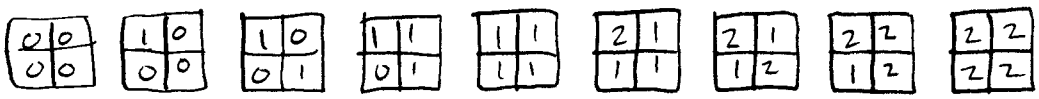


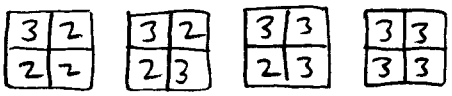
- worse mutilation

Color image → B/W printer or to reduce # of colors

- not employed going from 3 byte color to 1 byte (map to closest)

How about going to 2-bit color? (only 2 colors at a time)





*TEST QUESTION

add up all colors, divide by # pixels → use these as thresholds.