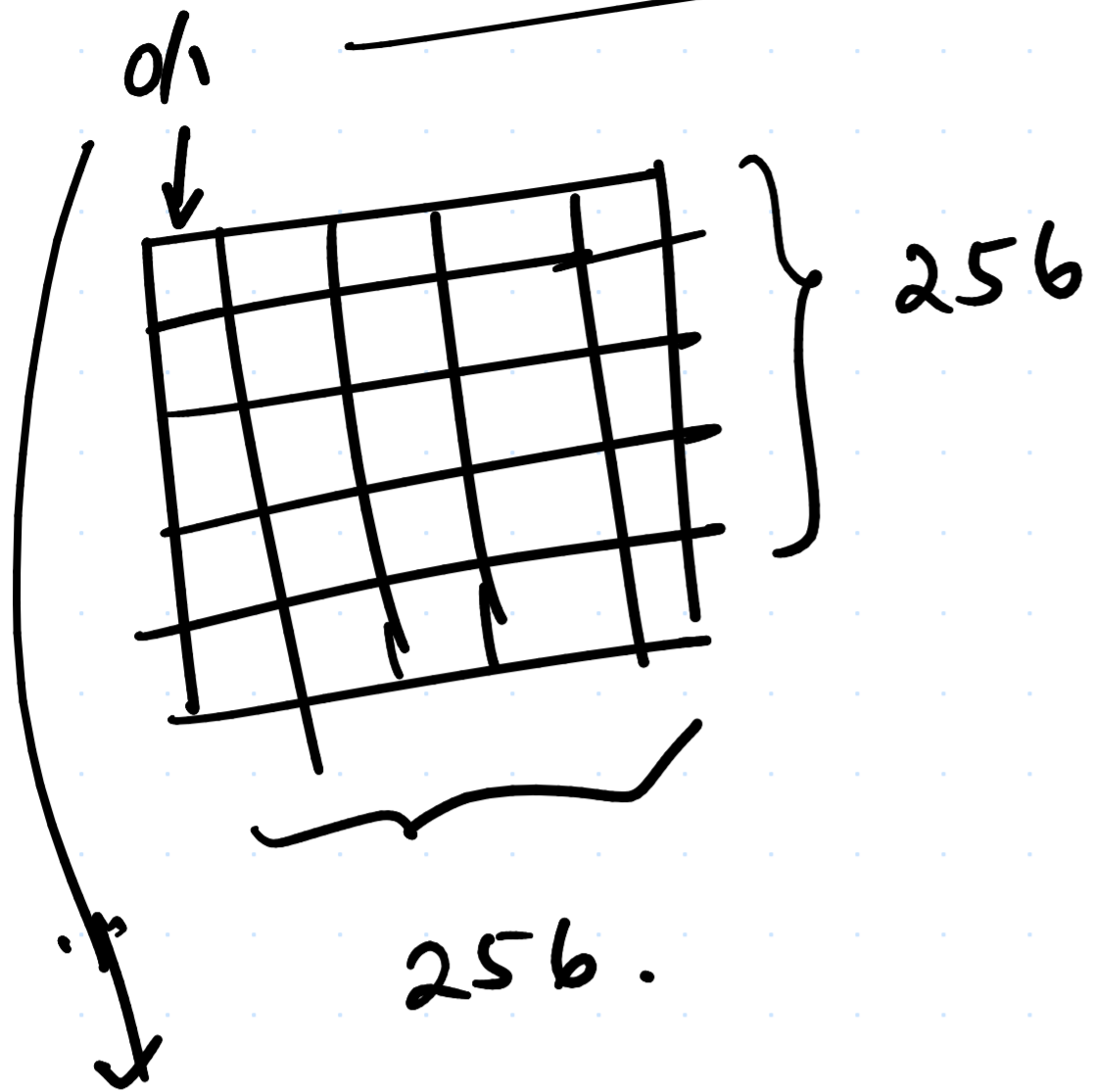


Lecture - 1 ACVDL

15/01/2025



Binary  $\rightarrow$   $(2)^{256 \times 256}$

8 bit  $\rightarrow$  color  $\rightarrow 2^8 = \underline{\underline{256-1}}$   
 $= 255$

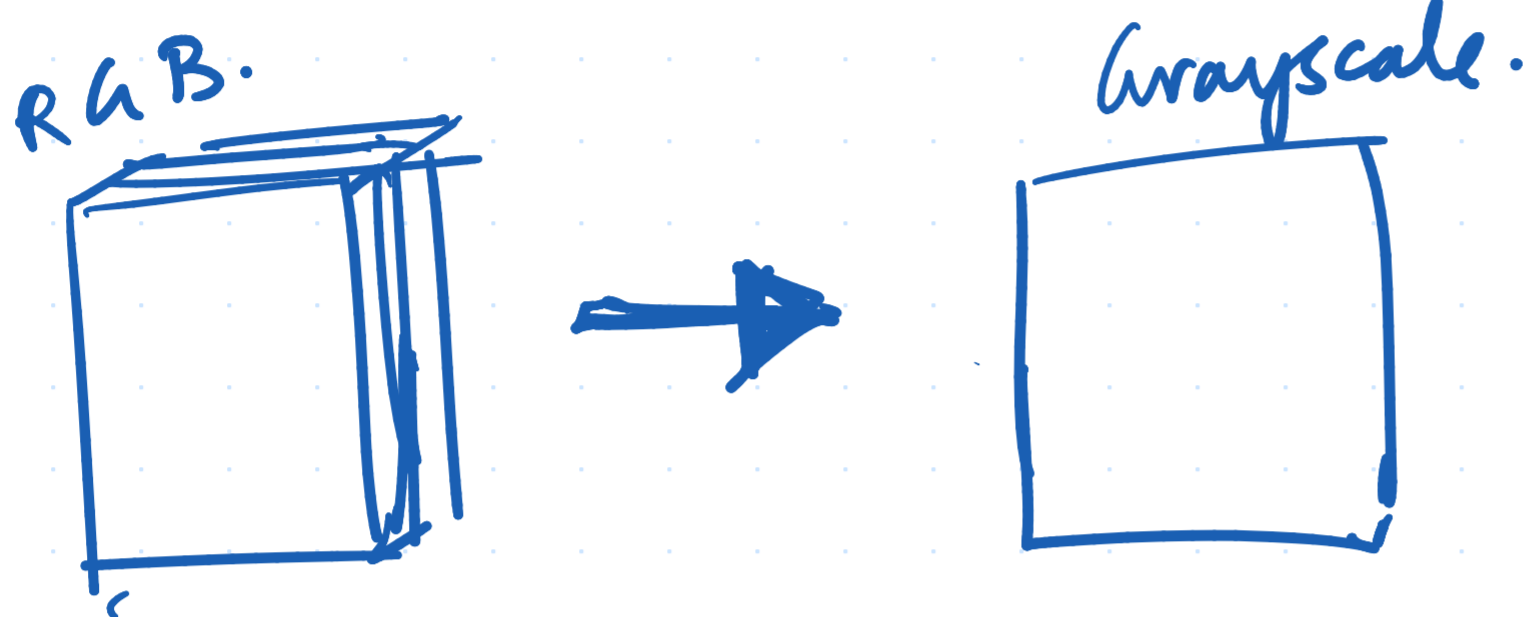
(256).  $\leftarrow \underline{\underline{0-255}} \rightarrow (\dots)$

Color  $\Rightarrow$   $(256)^{256 \times 256}$

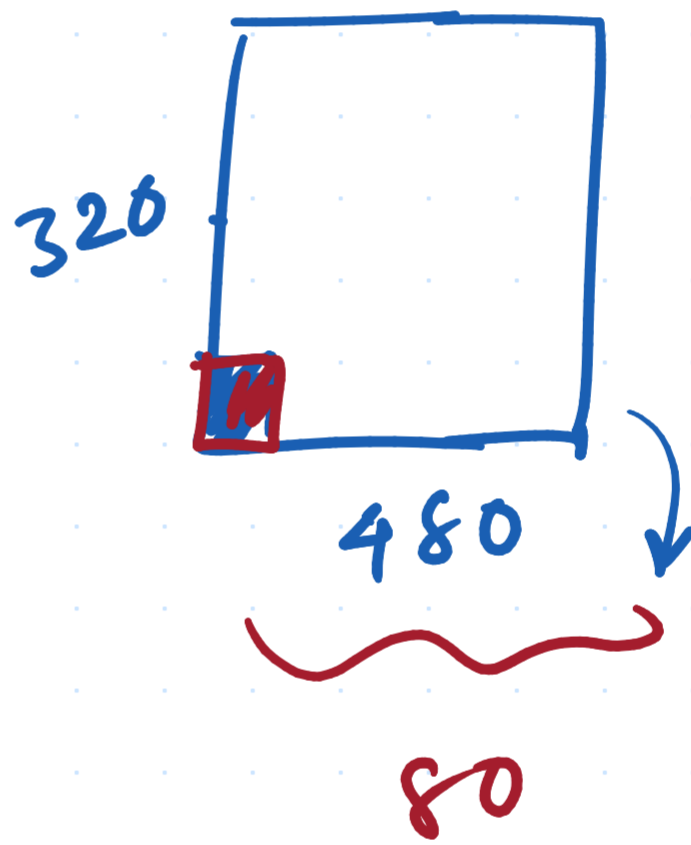
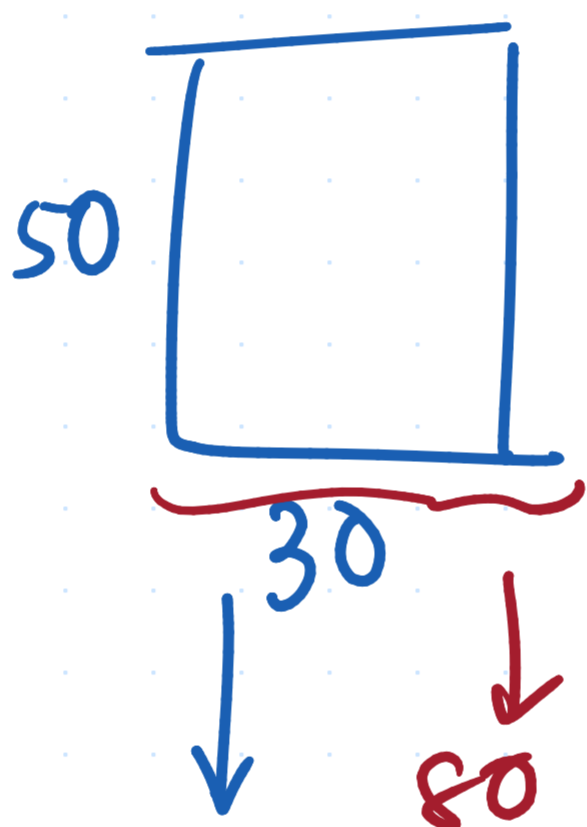
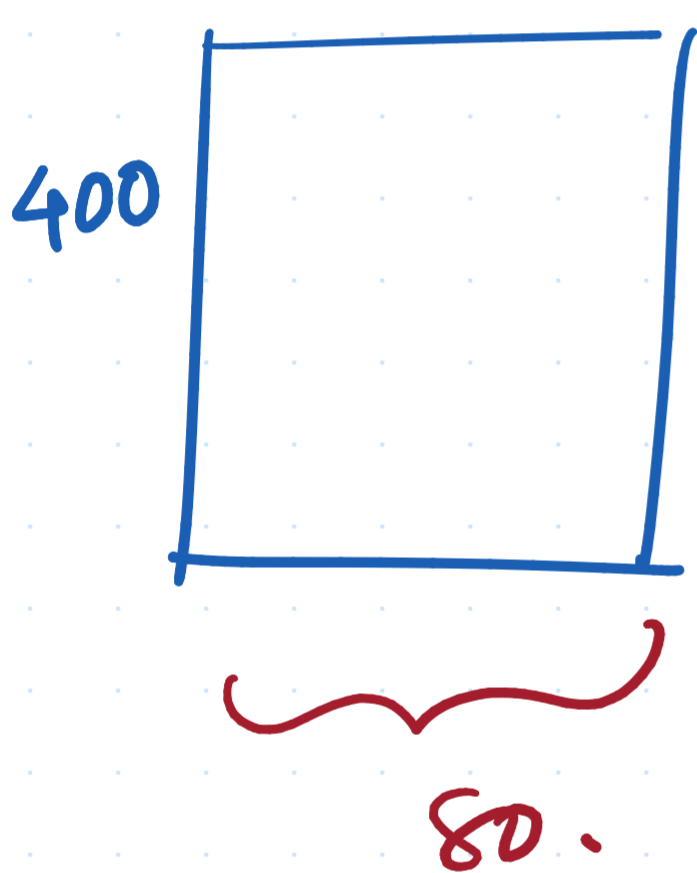
(May - June - endsum)  $\rightarrow$  11<sup>th</sup> June endsum.

(5<sup>th</sup> Feb - 2025)

RGB → 3-channel. opencv.



imread (grayscale)  
(cv2.imread-grayscale)



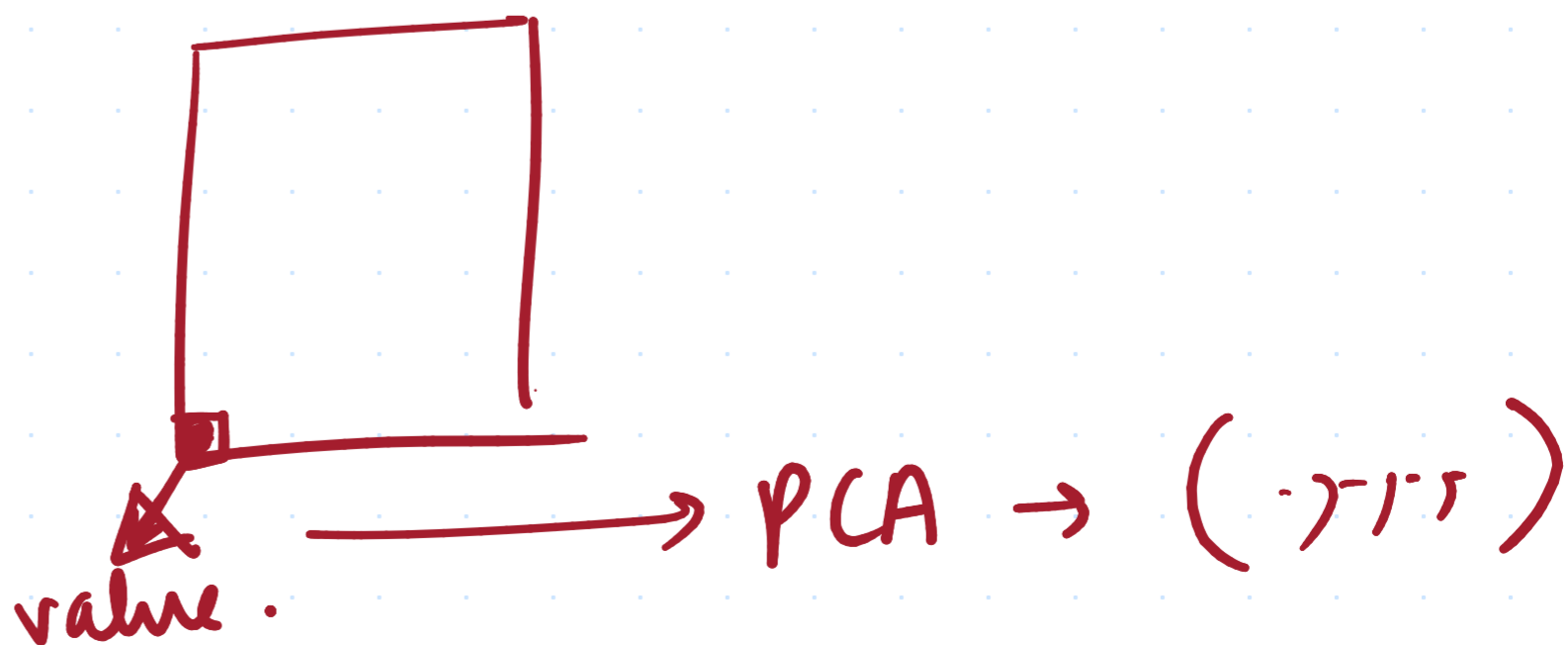
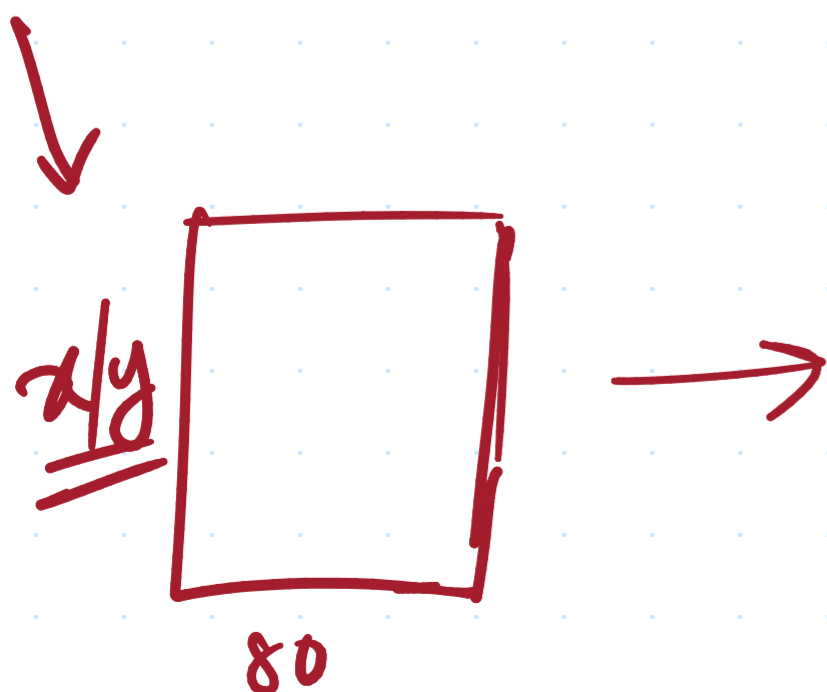
$$\frac{480}{80} = 6$$

500 → 80.

(rescale-down)

30 → 80

(rescale-up)





$$\left\{ \begin{array}{l} 20 \\ 20 \end{array} \right. \begin{array}{c} 20 \\ \square \end{array} \xrightarrow[3]{\text{PCA}} \underline{(0, 0, 0)} \quad \text{3-length vector.}$$

$$\left\{ \begin{array}{l} 20 \\ 20 \end{array} \right. \begin{array}{c} 20 \\ \square \end{array} \xrightarrow[7]{\text{PCA}} \underline{(\dots, \dots, \dots)} \quad \text{7-length vector.}$$

(0)

$$7 \begin{pmatrix} \vdots \\ \vdots \end{pmatrix} \rightarrow \begin{pmatrix} \vdots \\ \vdots \end{pmatrix}$$

$\|L_1\|$  ↓

$$\begin{pmatrix} x_1 \\ x_2 \\ x_3 \\ x_4 \\ x_5 \\ \vdots \\ x_7 \end{pmatrix} \quad \begin{pmatrix} y_1 \\ y_2 \\ \vdots \\ y_7 \end{pmatrix}$$

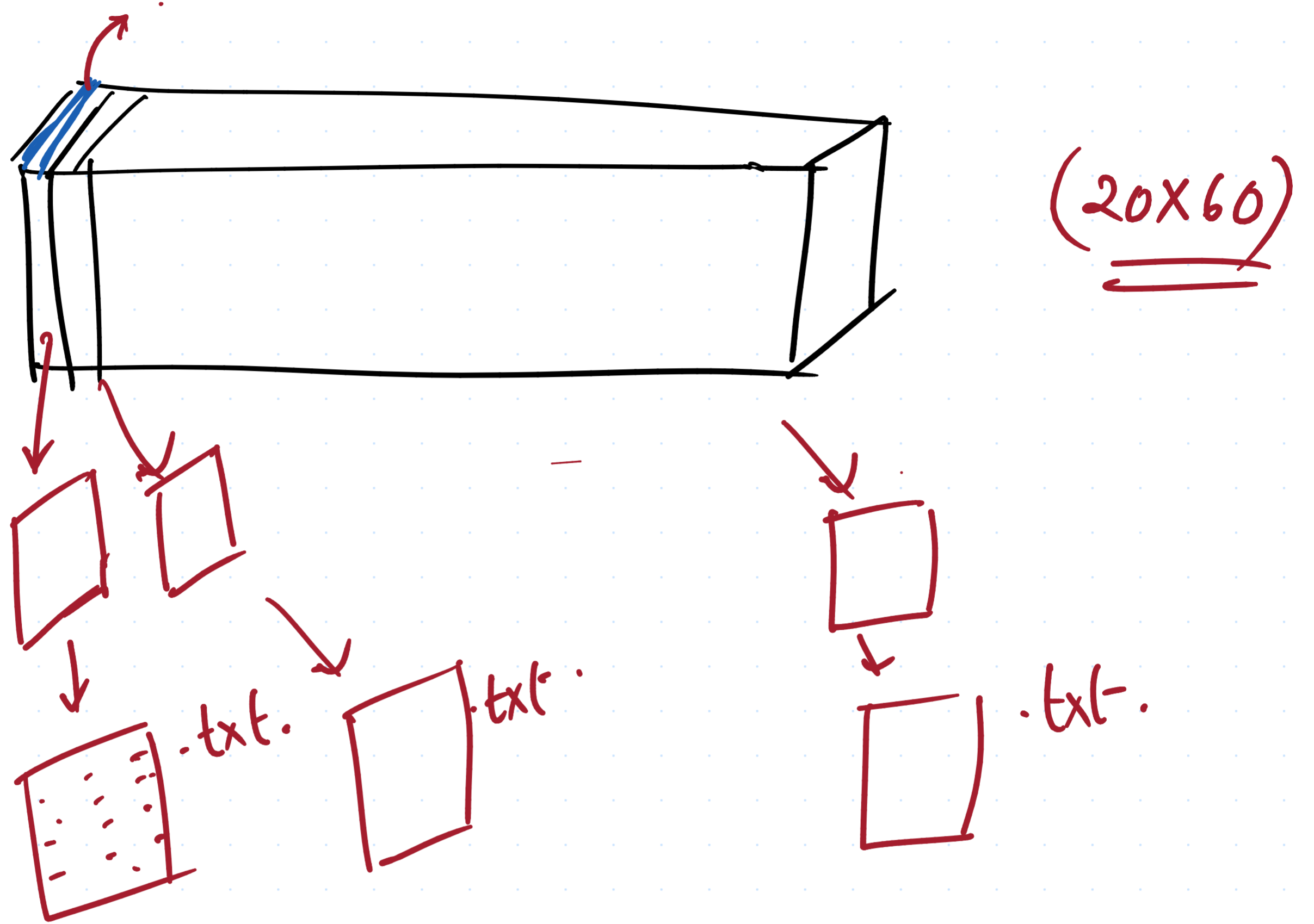
$$\left( \underline{\|x_1 - y_1\|} + \underline{\|x_2 - y_2\|} + \dots + \underline{\|x_7 - y_7\|} \right) \checkmark$$

~~$$\left( (x_1 - y_1) + (x_2 - y_2) + \dots + (x_7 - y_7) \right)$$~~

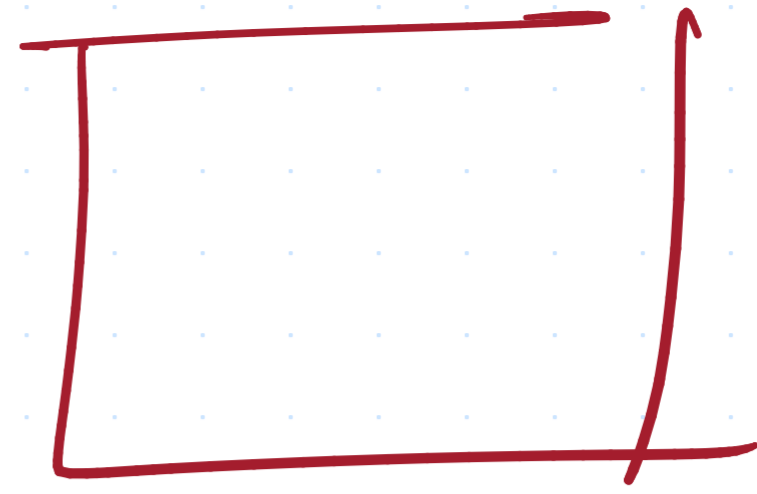
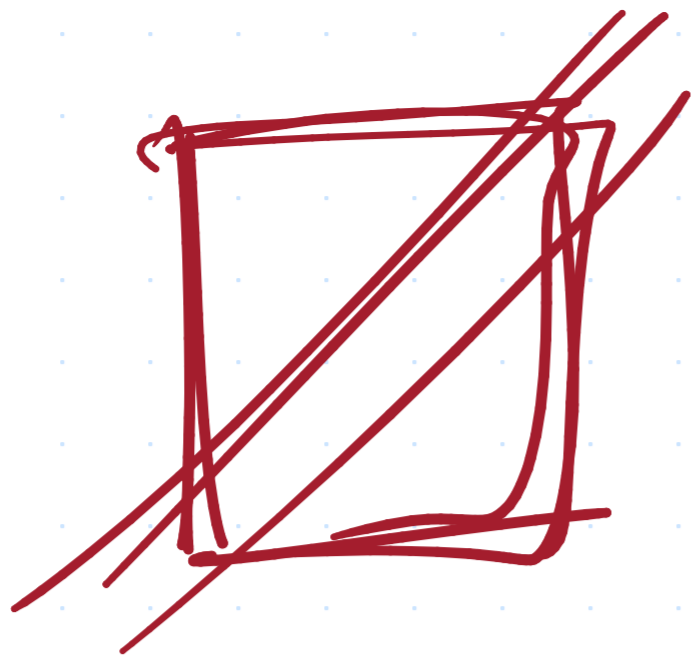
Virtually better result.

PCA(x, 7) → ✓

3, 5, 7.



\$ Cat f/1.txt  
- - -  
- - -  
- - -



video  
animation.