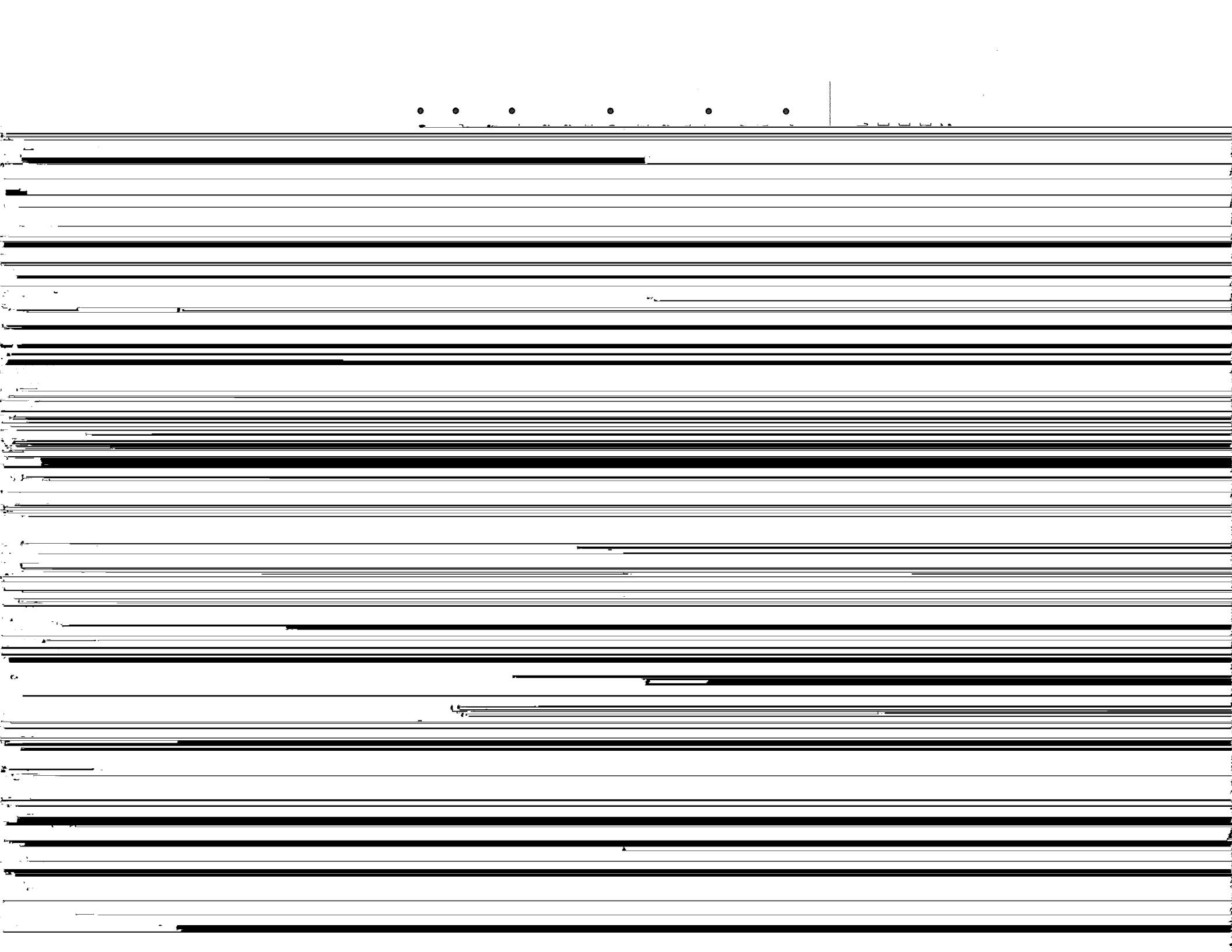
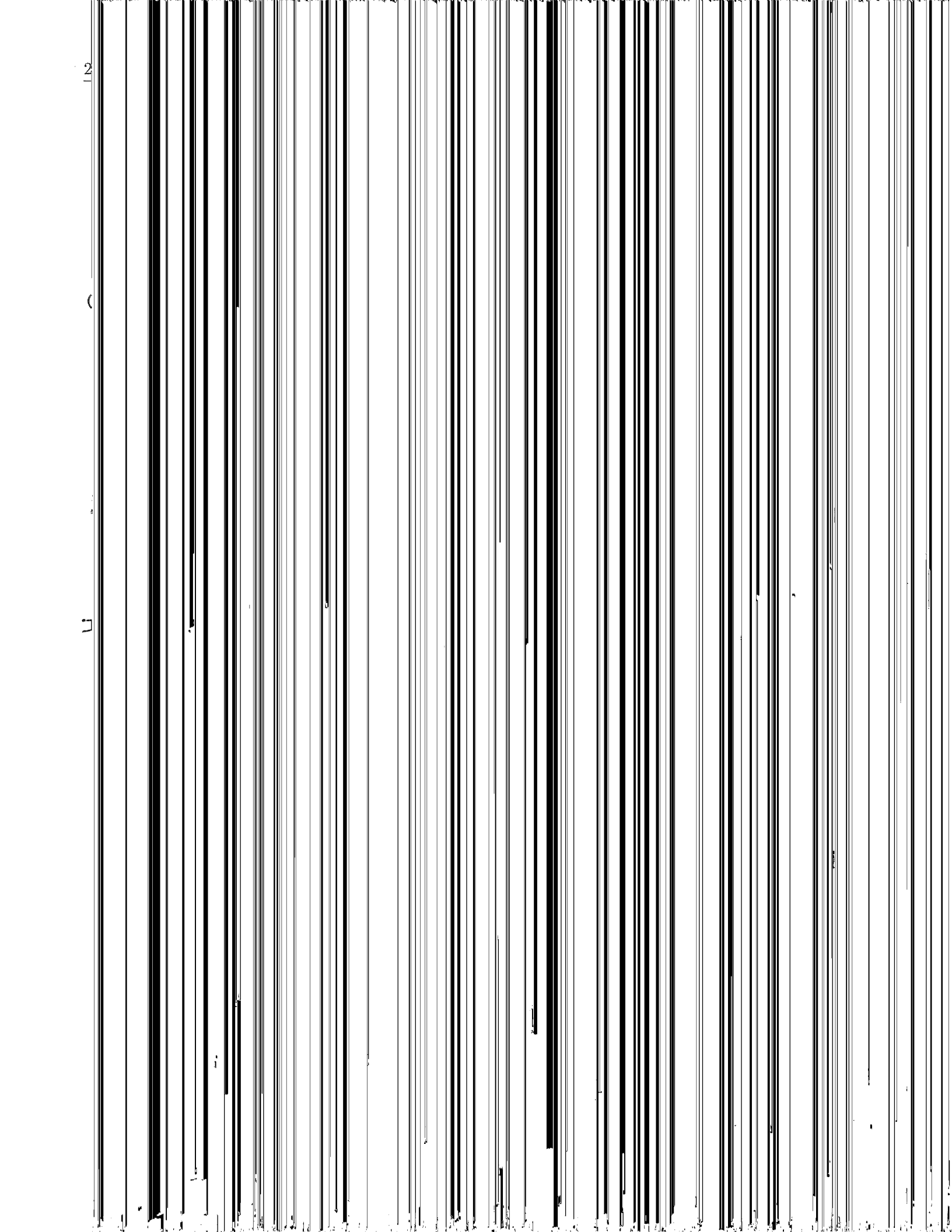
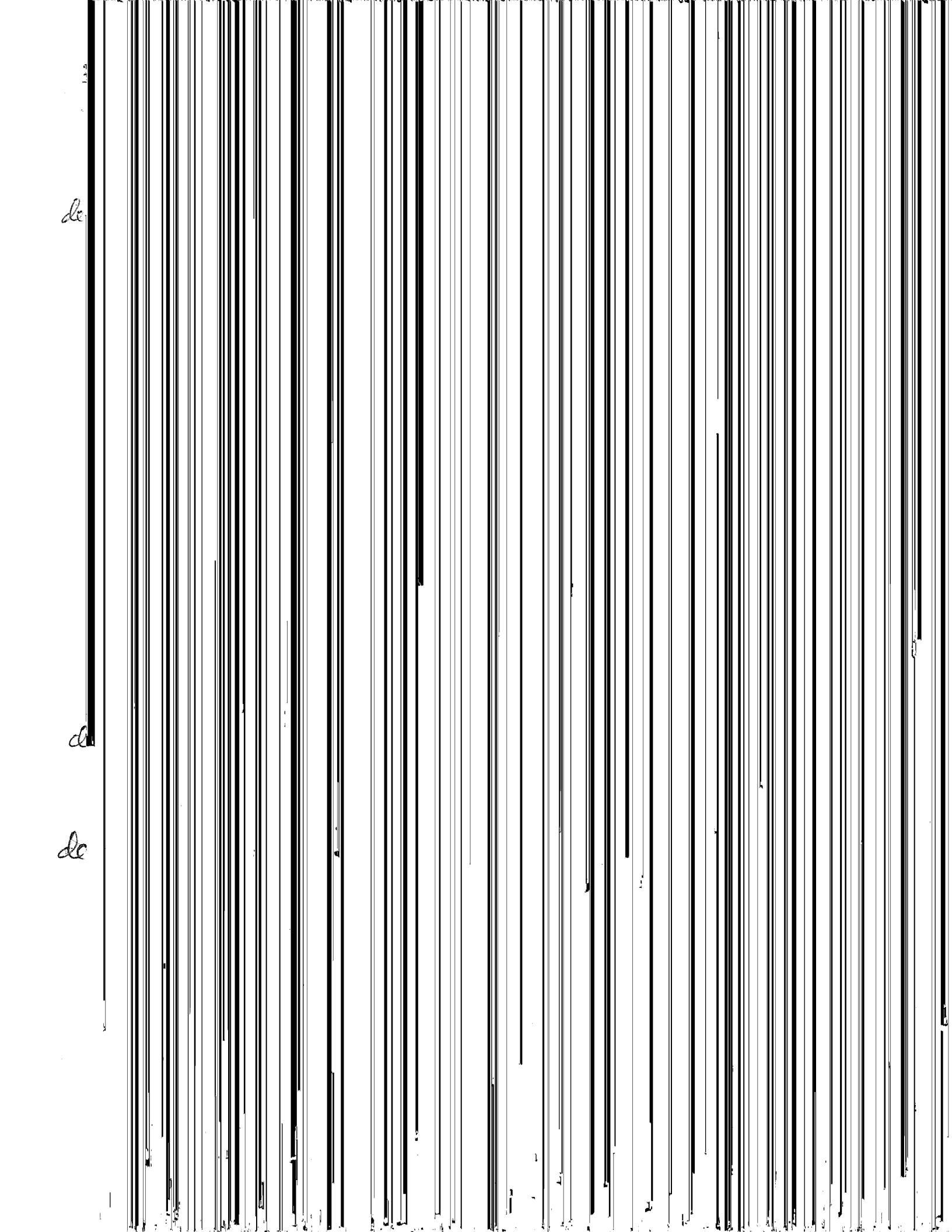


[redacted]





7. Let A be a 4

$= \det($

$= c$

8. If $A = \begin{pmatrix} k & 3 \\ 0 & 1 \end{pmatrix}$

$|AA^T| = |$

$|A^TA| = |\begin{pmatrix} k \\ 3 \\ - \end{pmatrix}$

$= k^2(1$

$= k^2$

$\Rightarrow$ N

201-NY

9. Le

(a

(b

(c

10. Find the e

$\underline{N} = \langle 1$

$= \langle$

use

$-3x$

11. Prove: I
is equal

12. Simplify

13. Consider the lines $\begin{cases} x = \\ y = \\ z = - \end{cases}$ P

(a) Find the points in eacl

$\vec{PQ} = \langle -1 + 2t$

$\begin{cases} \vec{PQ} \cdot \underline{v_1} = 0 \\ \vec{PQ} \cdot \underline{v_2} = 0 \end{cases} \Rightarrow \begin{cases} -1 + \\ 2(-1 \end{cases}$

$\Rightarrow$

$\therefore \quad P = (2+$

and $Q = (1+2$

(b) Find the shortest dista

$d = \|\vec{PQ}\| =$

$= (\sqrt{}$

201-NY

14. Le

we

15. Pr

le

+hu

cinc

16.

17.

18. Is this set of n
exhibit one o

by inspe

=

19. Let $A =$ (

$A\mathbf{x} = \mathbf{0}$.

$$\begin{pmatrix} 1 & 1 & 2 \\ -2 & -1 & 1 \\ 3 & 2 & 1 \\ 4 & 2 & -2 \end{pmatrix}$$

$$\xrightarrow[R_4+2R_2]{\substack{R_1-R_2 \\ R_3+R_2}} \begin{pmatrix} 1 \\ 0 \\ 0 \\ 0 \end{pmatrix}$$

and a basis

a