

# Caso di Studio

2 Matrici  $n \times n$

$$\boxed{A} \cdot \boxed{B} = \boxed{N}$$

$$N_{ij} = \sum_{k=1}^n A_{ik} \cdot B_{kj} \quad \text{h somma}$$

per  $n^2$  volte

$n_1$	$b_x$	
	a	b
	c	d

	e	f
	g	h

$$= \boxed{\begin{matrix} \ominus (n^3) \\ ae+bg & af+bh \\ ce+dg & cf+dh \end{matrix}}$$

$$T(n) = 8T(n/2) + \Theta(n^2)$$

$$T(n) = \Theta(n^3)$$

$n/2$	a	b
	c	d

e	f
g	h

$ae+bg$	$af+bh$
$ce+dg$	$cf+dh$

$$P_1 = a(f-h)$$

$$P_2 = (a+b)h$$

$$P_3 = (a+d)e$$

$$P_4 = d(g-e)$$

$$P_5 = (a+d)(e+h)$$

$$P_6 = (b-d)(g+h)$$

$$P_7 = (a-c)(e+f)$$

$P_5 + P_4$ $- P_6 + P_7$	$P_1 + P_2$
$P_3 + P_4$	$P_1 + P_5$ $- P_3 + P_7$

//

 $\frac{1}{2}$ 

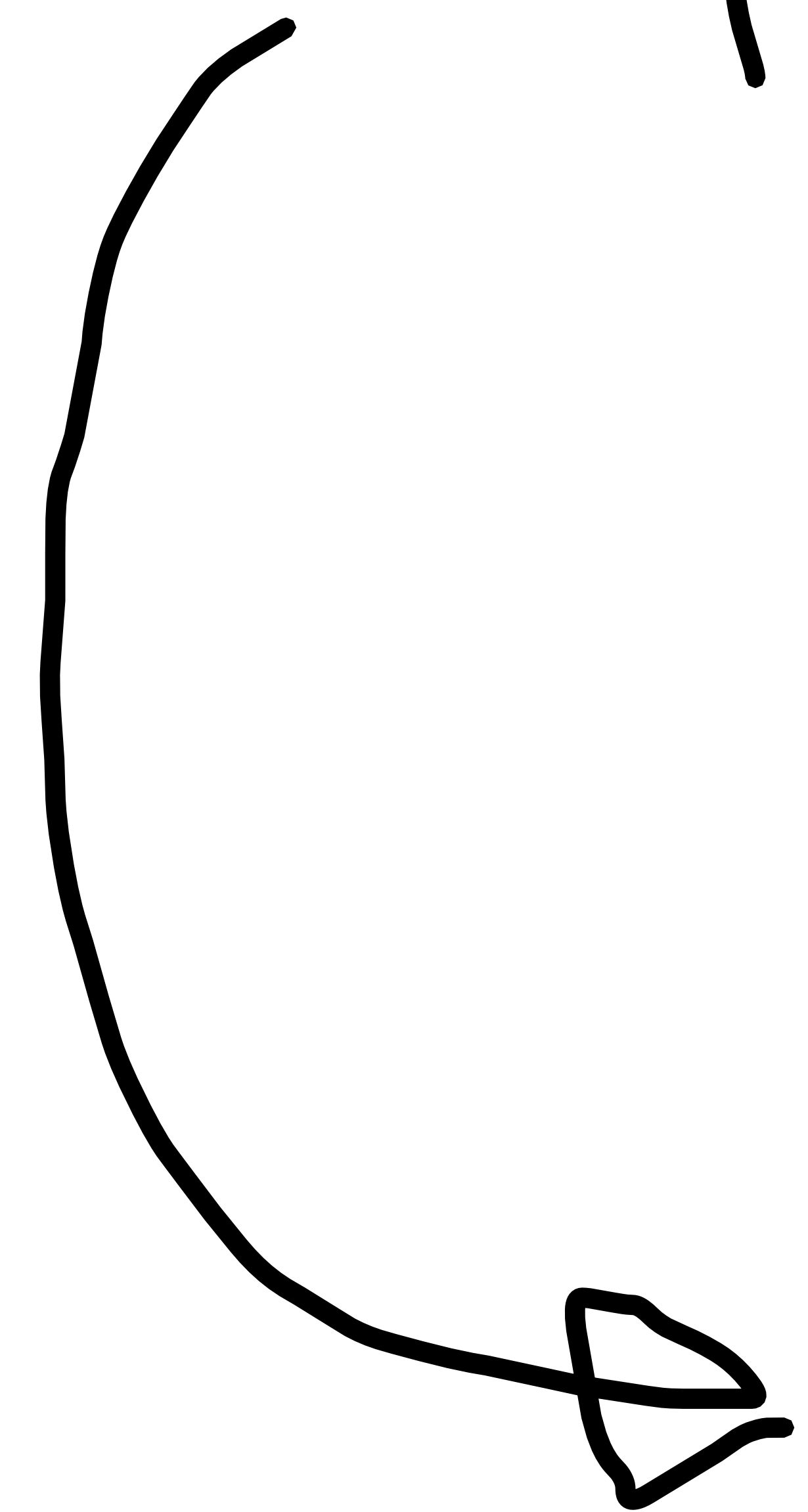
a	b
c	d

e	f
g	h

 $=$ 

<u><math>ae + bg</math></u>	<u><math>af + bh</math></u>
<u><math>ce + dg</math></u>	<u><math>cf + dh</math></u>

$$T(n) = 7 \cdot T(n/2) + \Theta(n^2)$$



$$\Theta(n^{\log_2 7}) = \Theta(n^{2.8...})$$

2.37...

$n$

$\Delta n^2$

# Esercizio

$$S = [a_1, a_2, \dots, a_n]$$

decidere se  $S$   
contiene un elemento  
presente la maggioranza assoluta  
delle volte

$$\geq \left\lfloor \frac{n}{2} \right\rfloor + 1$$