TRIANGULAR I INVERSE INEQUALITY:

$|x + y| \leq |x| + |y|$

$|x - y| \leq |x| + |y|$ $|x| \leq$a → -a≤x≤a

$d(P, Q) = \sqrt{|a_1 - b_1|^2 + |a_2 - b_2|^2}$

$|d(P, Q)|^2 = |a_1 - b_1|^2 + |a_2 - b_2|^2$

Començem per $(|a - b|)^2 \leq (|a| + |b|)^2$=$|a|^2 + 2.|a||b| + |b|^2$
si a=-2 i b=4: $|-2 - 4| \leq |-2| + |4|$: $|-6| \leq$2+4 Ok!

INEQUALITY CAUCHY-SCHWARZ:

$(a_1 - b_1)^2 + (a_2 - b_2)^2 \leq$

$\geq (a_1^2 + a_2^2) + 2.\sqrt{a_1^2 + a_2^2}.\sqrt{b_1^2 + b_2^2} + b_1^2 + b_2^2 \rightarrow$

$\rightarrow (a_1^2 - 2a_1b_1 + b_1^2) + (a_2^2 - 2a_2b_2 + b_2^2) \leq (a_1^2 + a_2^2) +$
$2.\sqrt{a_1^2 + a_2^2}.\sqrt{b_1^2 + b_2^2} + b_1^2 + b_2^2 \rightarrow$

$\rightarrow -2a_1b_1$- $2a_2b_2 \leq 2.\sqrt{a_1^2 + a_2^2}.\sqrt{b_1^2 + b_2^2}$,whic is the **inequality Cauchy- Schwarz**, or otherwise:

$|\sum_{i=1}^{n} a_i b_i| \leq \sqrt{\sum_{i=1}^{n} a_i^2 \cdot \sum_{i=1}^{n} b_i^2}$