

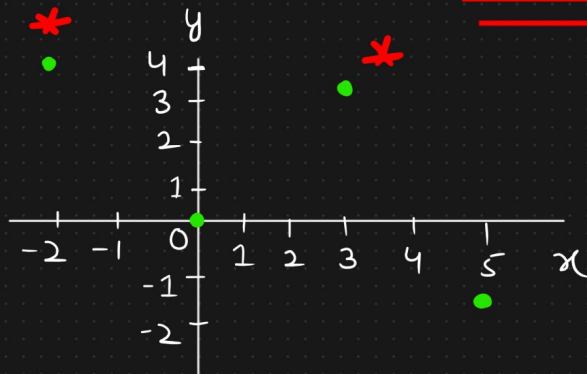
# K closest Points

Points =  $\left[ \begin{matrix} [3, 3] \\ x \quad y \end{matrix} \right], [5, -1], [-2, 4]$

k=2

Output =  $[3, 3], [-2, 4]$

Origin =  $(0, 0)$



Distance measure

⇓

Euclidean

Distance

$(0, 0)$

$P_1(x_1, y_1)$

$(x_2, y_2)$   
 $P_2$

Standard  
Formula

$$\Rightarrow \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

$$\Rightarrow \sqrt{x_2^2 + y_2^2}$$

0

1

Minheap  $\rightarrow$   $(\text{Distance}, \text{Points})$

⇓

final output

Deleting (Pop)  $\Rightarrow$  k times

$\hookrightarrow$  Top k minimum

distances

⇓

Print points

Approach  $\Rightarrow$