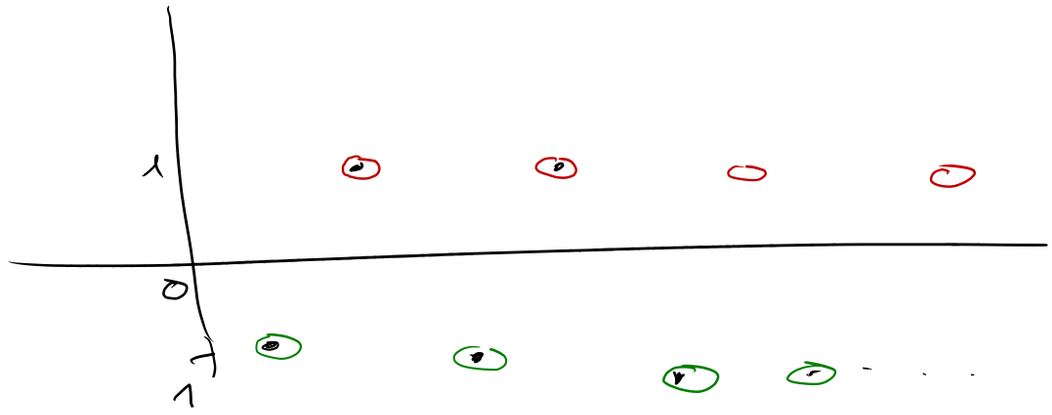
$a_n = (-1)^n$

$\lim (-1)^n$: (-1, 1)



$\lim 1 = 1$

$\lim -1 = -1$

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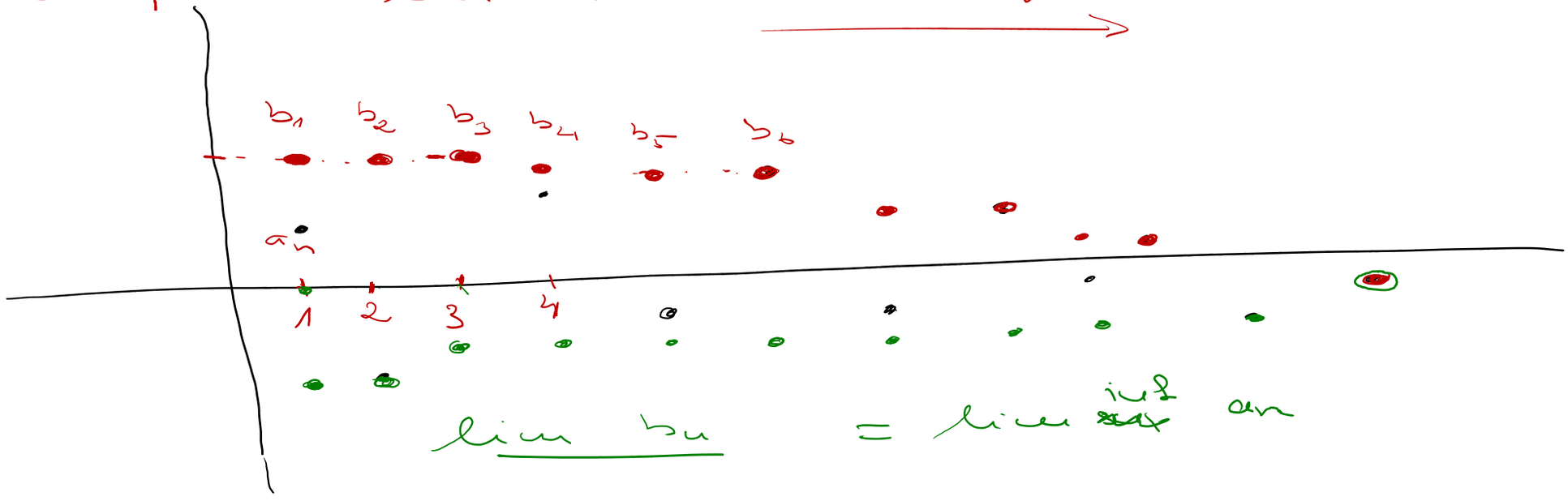
limsup $\lim b_n = \limsup a_n$ →

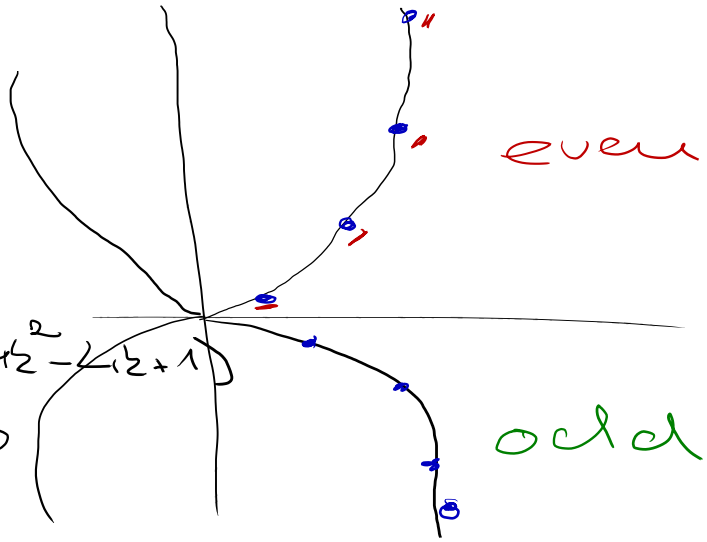


$\lim b_n = \liminf a_n$

$$\lim_{n\to\infty} \frac{1}{n} = 0 \qquad \liminf = \lim = \limsup$$

$$\limsup \frac{1}{n} = 0 \qquad \liminf \frac{1}{n} = 0$$

$$a_n = (-1)^n \cdot n^2$$



n odd $\quad n = 2k-1$

$$\lim_{k\to\infty} (-1)^{2k-1} \cdot (2k-1)^2 =$$

$$= \lim (-1)(4k^2 - 4k + 1)$$

$$= -\infty$$

n even: $\quad n = 2k$

$$\lim_{k\to\infty} (-1)^{2k} \cdot (2k)^2 =$$

$$= \lim_{k\to\infty} 1 \cdot 4k^2 = \infty$$

$\limsup = \infty$

$\liminf = -\infty$