

b) Miremos un contraejemplo para $n=2$ Es claro que:

$$u = (5^2, 4^2) \quad \gamma \quad v = (12^2, 3^2) \text{ no cumplen la desigualdad}$$

triangular para $p=0.5$:

$$\|u\|_{0.5} = (\sqrt{5^2} + \sqrt{4^2})^2 = 9^2$$

$$\|v\|_{0.5} = (\sqrt{12^2} + \sqrt{3^2})^2 = 15^2$$

$$\begin{aligned} \|u+v\|_{0.5} &= (\sqrt{5^2+12^2} + \sqrt{3^2+4^2})^2 \\ &= (13+5)^2 = 18^2 \end{aligned}$$

Pero

$$\|u+v\|_{0.5} \geq \|u\|_{0.5} + \|v\|_{0.5} \text{ luego}$$

$$18^2 \geq 9^2 + 15^2$$

$$\underline{324 \geq 306}$$

//