

16/05/2025

$$c) \quad | \overset{2}{\widetilde{x-3}} | < 7 ?$$

$$|y| < 7 \quad \text{Soluci3} \quad -7 < y < 7$$

$$-7 < x-3 < 7 \quad / +3$$

$$-7+3 < x-3+3 < 7+3$$

$$\boxed{-4 < x < 10}$$

Otho

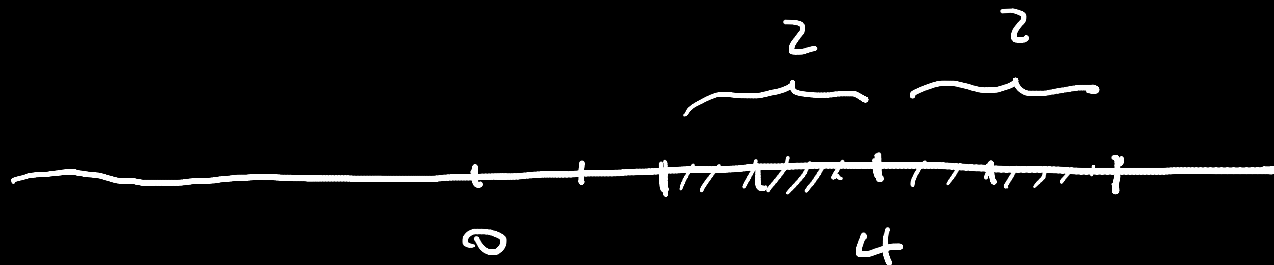
$$| \underbrace{x-4}_y | < 2$$

$$|y| < 2 \quad \text{Solve} \quad -2 < y < 2$$

$$-2 < x-4 < 2 \quad / +4$$

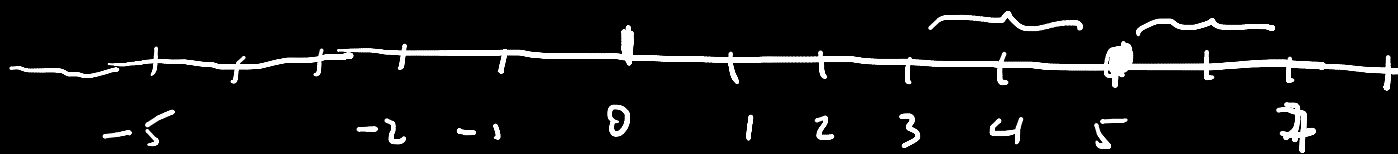
$$-2+4 < x-4+4 < 2+4$$

$$\boxed{2 < x < 6}$$



~~Again~~ DTA exmp

grafica



$$|x| < 2$$

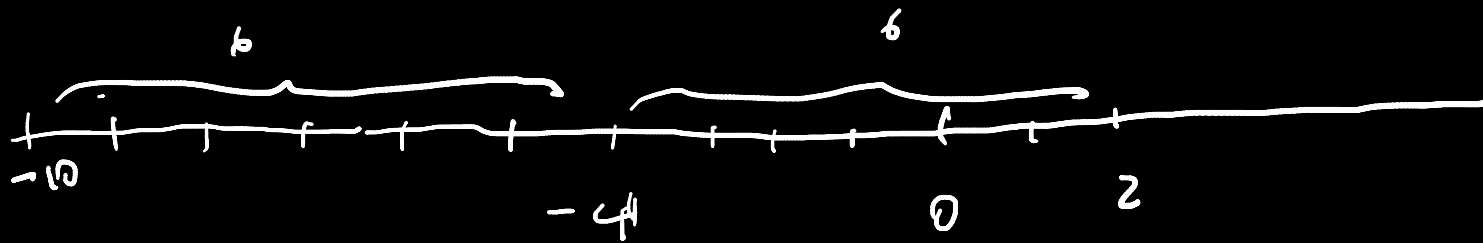
$$|x - 5| < 2$$

$$-2 < x - 5 < 2 \quad / +5$$

$$3 < x < 7$$

sub' tice

$$|x + 4| < 6$$



a) $-10 < x < 2$

b) $-6 < x + 4 < 6 \quad / -4$

$$-6 - 4 < x + 4 - 4 < 6 - 4$$

$$\boxed{-10 < x < 2}$$

La función exponencial

Antecedentes: potencias

$$2^3 = 2 \cdot 2 \cdot 2$$

$$3^5 = 3 \cdot 3 \cdot 3 \cdot 3 \cdot 3$$

$$2^{-4} = \frac{1}{2} \cdot \frac{1}{2} \cdot \frac{1}{2} \cdot \frac{1}{2} = \left(\frac{1}{2}\right)^4$$

$$\underbrace{2^3 \cdot 2^{-5}} = \cancel{2} \cdot \cancel{2} \cdot \cancel{2} \cdot \frac{1}{\cancel{2}} \cdot \frac{1}{\cancel{2}} \cdot \frac{1}{\cancel{2}} \cdot \frac{1}{2} \cdot \frac{1}{2} = \frac{1}{2} \cdot \frac{1}{2}$$
$$= \left(\frac{1}{2}\right)^2 = 2^{-2}$$

$$2^{-2}$$

$$2^{-n} = \frac{1}{2^n}$$

$$2^n$$

$$3^n$$

$$\sqrt{2} = 2^{1/2} \quad \sqrt[5]{2} = 2^{1/5}$$

$$2^x \cdot 2^y = 2^{x+y}$$

$$2^{1/2} \cdot 2^{1/2} = \sqrt{2} \cdot \sqrt{2} = 2 = 2^{1/2+1/2} = 2^1$$

$$2^x$$

$x = \text{rational} \text{ or } \text{negative rational}$

$$\underbrace{2^{0.75}} = 2^{3/4} = \sqrt[4]{2^3}$$

2^x : x número real.

3^x : x número real

el número e

$$2 < e < 3$$

$$\left(1 + \frac{1}{n}\right)^n \xrightarrow{n \rightarrow \infty} e$$

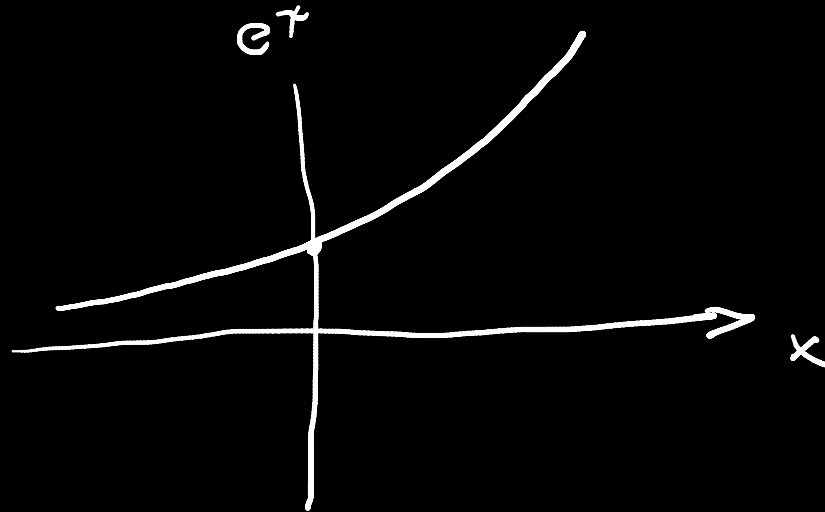
La fonction e^x

$$x \rightarrow +\infty \quad e^x \rightarrow +\infty$$

$$x = 0 \quad e^0 = 1$$

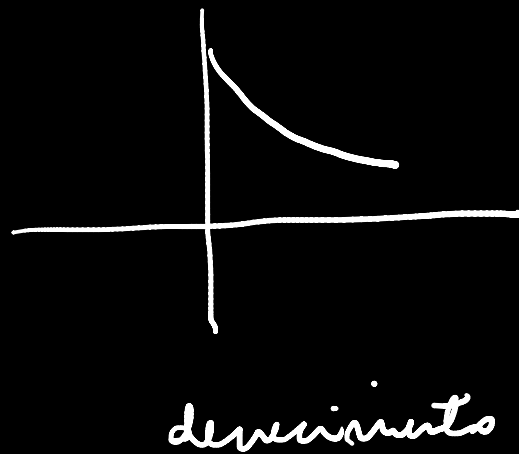
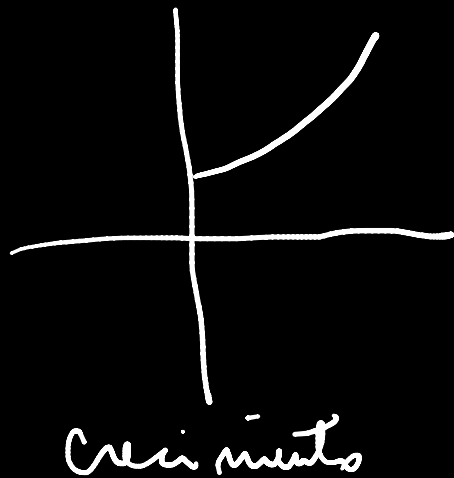
$$x \rightarrow -\infty \quad e^x \rightarrow 0$$

Entrée de graphique de e^x



Los argumentos de Quince y Fermi
deben ser "ceps" con la función

$$\begin{array}{cc} e^{\alpha x} & ; & e^{-\lambda x} \\ x > 0 & & x > 0 \\ \alpha > 0 & & \lambda > 0 \end{array}$$



Trabajo en funciones del tipo

$$e^{0.1x}$$

;

$$e^{-0.02x}$$

$$x \geq 0$$

CRECIMIENTO

$$x \geq 0$$

DECRECIMIENTO

$$e^{0.1x}$$

$$e$$

;

$$x=12$$

$$e^{0.1 \times 12}$$

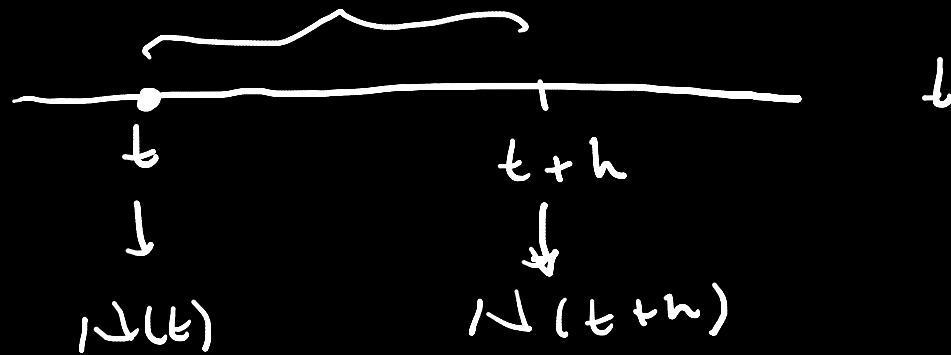
$$e$$

$$= e$$

$$1.2$$

c) ¿Cómo surge la función exponencial de crecimiento?

$N(t)$: n.º de individuos en el tiempo t



$$N(t+h) = N(t) + \propto N(t) \cdot h$$