

# UDS



UNIVERSIDAD DEL SURESTE

Campus Comitán

PASIÓN POR EDUCAR

Licenciatura de Medicina Humana

Tema: Poniendo Límites.

Materia: Biomatemáticas.

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Semestre: 2° Grupo: "C"

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## Límites en matemáticas.

Una magnitud a la que se acercan progresivamente los términos de una secuencia infinita de magnitudes es decir expresar las tendencias.

$$\text{Formula. } \longrightarrow \lim_{x \rightarrow a} f(x) = L$$

$$\lim_{x \rightarrow 2} x^2 = \lim x^2 = (2)^2 = 4.$$

$$\lim_{x \rightarrow 2.5} x^2 = \lim x^2 = (2.5)^2 = 6.25$$

$$\lim_{x \rightarrow 1.5} x^2 = \lim x^2 = (1.5)^2 = 2.25$$

$$\lim_{x \rightarrow 3} x^2 = \lim x^2 = (3)^2 = 9.$$

$$\lim_{x \rightarrow 1} \frac{x^2 - 1}{x - 1} = \lim x^2 = \frac{(x+1)(x-1)}{x-1} = (x+1) = (1+1) = 2$$

$$\lim_{PH(x) \rightarrow 7.2} x^2 = \lim x^2 = (7.2)^2 = 51.84$$

$$\lim_{PH(x) \rightarrow 7.4} x^2 = \lim x^2 = (7.4)^2 = 54.76$$

$$\lim_{PH(x) \rightarrow 7.6} x^2 = \lim x^2 = (7.6)^2 = 57.76$$



$$\lim_{PHX \rightarrow 6.6} x^2 = \lim x^2 = (6.6)^2 = 43.56$$

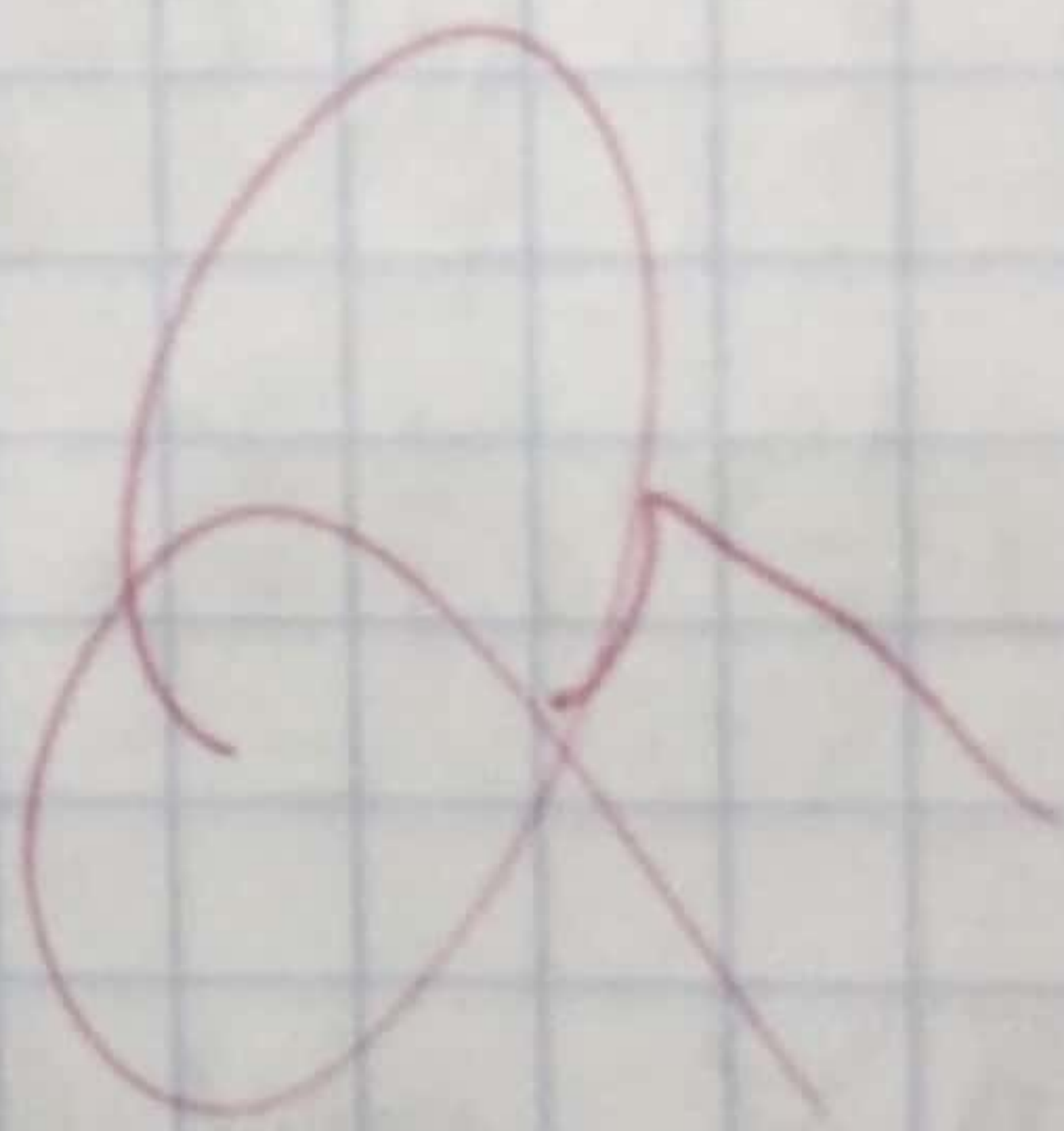
$$\lim_{PH(x) \rightarrow 7.6} x^3 = \lim x^3 = (7.6)^3 = 438.97$$

$$\lim_{PH(x) \rightarrow 7.8} x^3 = \lim x^3 = (7.8)^3 = 474.55$$

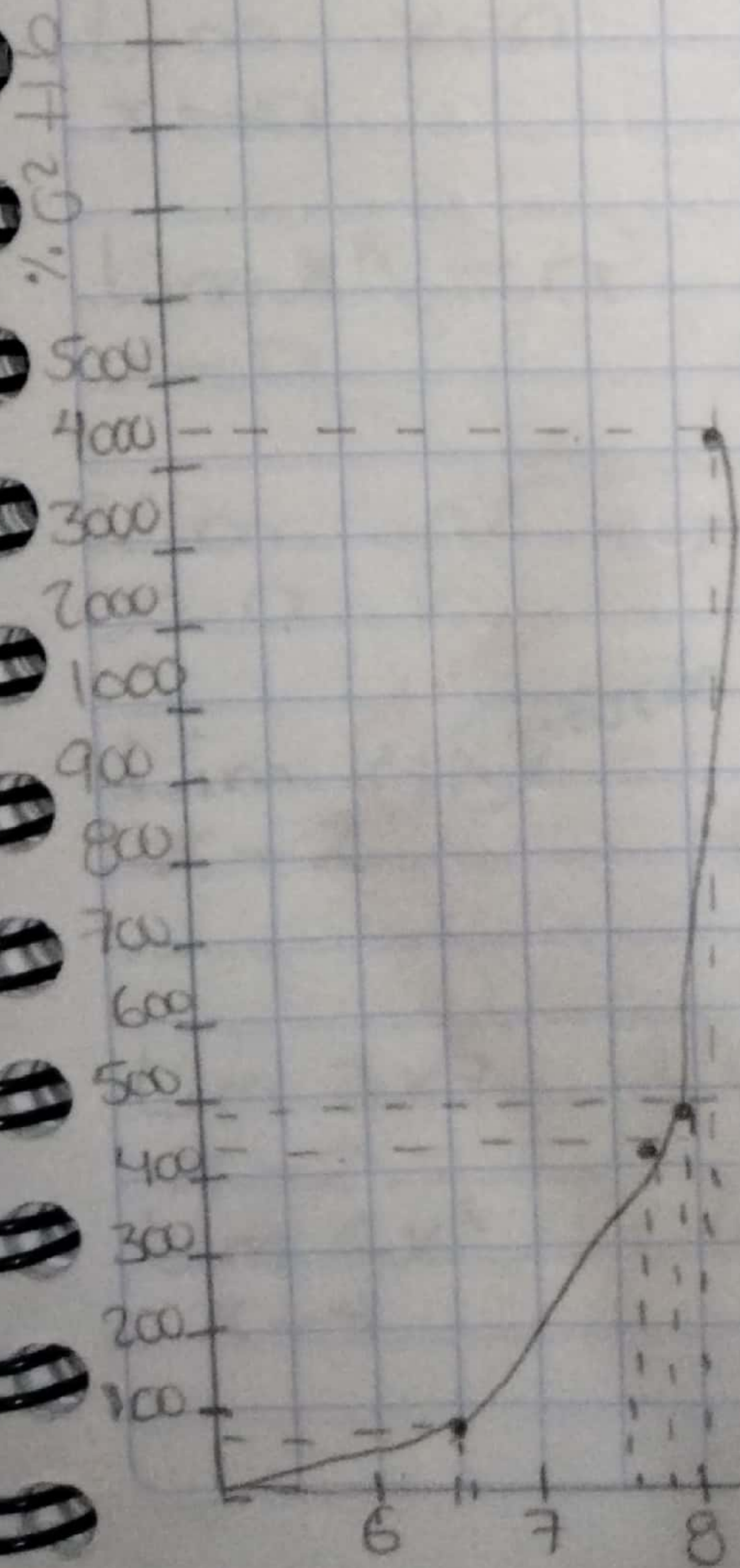
$$\lim_{PH(x) \rightarrow 8} x^4 = \lim x^4 = (8)^4 = 4,096$$

MCM

4,096	2
2,048	2
1,024	2
512	2
256	2
128	2
64	2
32	2
16	2
8	2
4	2
2	



8 → 100%  
2 → 25%





$$x-2 \quad x-2$$

# Propiedades de los límites

$$\lim_{x \rightarrow a} C = C$$

$$\lim_{x \rightarrow 3} 5 = 5$$

$$\lim_{x \rightarrow a} x = a$$

$$\lim_{x \rightarrow 3} x = 3$$

$$\lim_{x \rightarrow a} x^n = a^n$$

$$\lim_{x \rightarrow 3} x^2 = (3)^2 = 9$$

$$\lim_{x \rightarrow a} \sqrt[n]{x} = \sqrt[n]{a}$$

$$\lim_{x \rightarrow 2} \sqrt{x} = \sqrt{2}$$

$$\lim_{x \rightarrow 2} 4x^2$$

Constante  
Función

$$4 \lim_{x \rightarrow 2} x^2 = 4(2)^2 = 4(4) = 16$$

$$\lim_{x \rightarrow 2} 3x^3$$

$$3(2)^3 = 3(8) = 24$$

$$\lim_{x \rightarrow 4} 6x^2$$

$$6(4)^2 = 6(16) = 96$$



$$\lim_{x \rightarrow 3} 3x + 4x = 3(3) + 4(3) = 9 + 12 = 21$$

$$\lim_{x \rightarrow 2} 4x^2 \cdot 3x^2 = 4(2)^2 \cdot 3(2)^2 = 4(4) \cdot 3(4) = 16 \cdot 12 = 192$$

$$\textcircled{1} 4 \lim_{x \rightarrow 2} x^2 \cdot 3 \lim_{x \rightarrow 2} x^2$$

$$\lim_{x \rightarrow 2} \frac{x^2 - 2}{x^3 - 2x} = \frac{\lim_{x \rightarrow 2} x^2 - 2}{\lim_{x \rightarrow 2} x^3}$$

$$\lim_{x \rightarrow 2} \frac{x^2 - 2}{x^3 + 3} = \frac{4 - 2}{3(\lim_{x \rightarrow 2} x^3)} = \frac{-2(2)^2}{3(2)^3} = \frac{-2(4)}{3(8)} = \frac{-8}{24} = -0.333$$

PH6 disa to' Hb? K.C ← Formula.

PH9

$$\text{PH 5.5} \lim_{x \rightarrow 6} x = 6(6) = 36$$

$$\lim_{x \rightarrow 9} x = 9(9) = 81$$

$$\lim_{x \rightarrow 5.5} x = 5.5(5.5) = 30.25$$



# Tarea (Factorización)

$$\lim_{x \rightarrow 2} \frac{x^2 + x - 6}{x - 2}$$

$$\lim_{x \rightarrow 2} \frac{(x+3)(x-2)}{x-2} = \lim_{x \rightarrow 2} x+3 = 2+3 = 5$$

$$\lim_{x \rightarrow 2} \frac{x^2 + 5x + 4}{x^2 + 3x - 4}$$

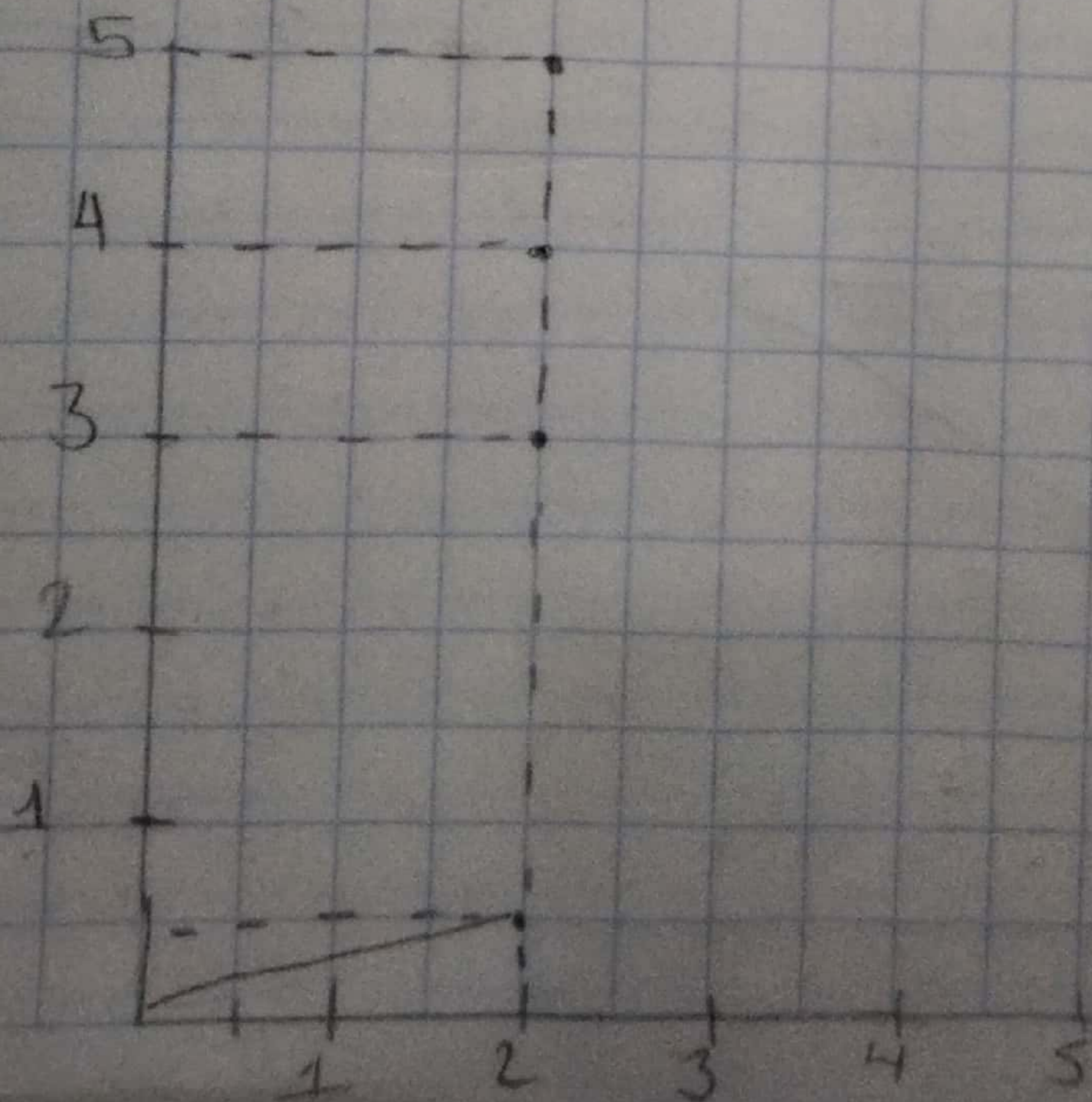
$$\lim_{x \rightarrow 2} \frac{(2+4)(x+1)}{(x+4)(x-1)} = \frac{2+1}{2-1} = \frac{3}{1} = 3$$

$$\lim_{x \rightarrow 2} \frac{x^2 - 4}{x - 2}$$

$$\lim_{x \rightarrow 2} \frac{(x+2)(x-2)}{x-2} = x+2 = 2+2 = 4$$

$$\lim_{x \rightarrow 2} \frac{x^2 - 5x + 6}{x^2 - 12x + 20}$$

$$\lim_{x \rightarrow 2} \frac{(x-3)(x-2)}{(x-2)(2-10)} = \frac{2-3}{2-10} = \frac{-1}{-8} = 0.125$$





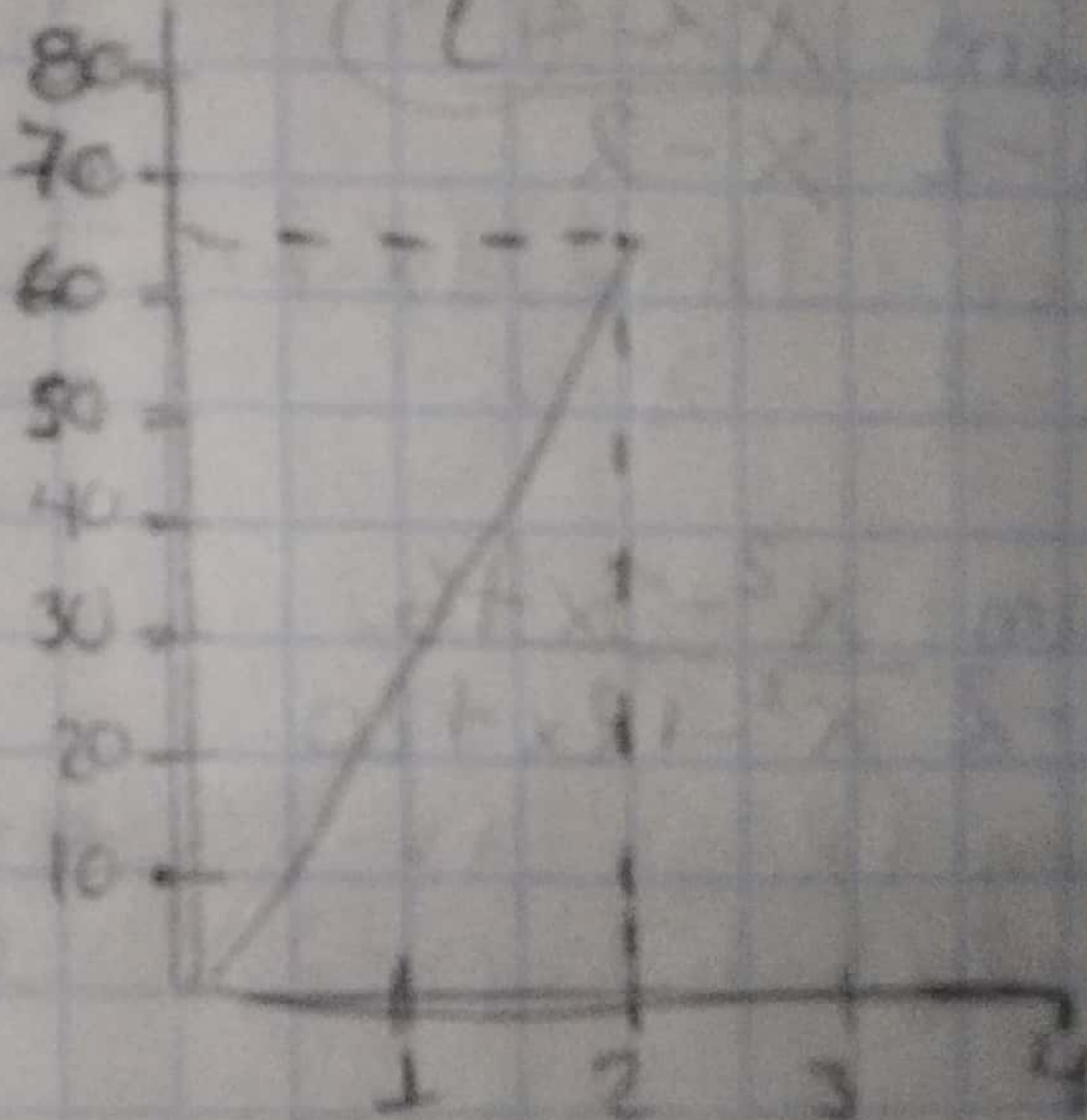
# Tarea "Propiedades"

$$\lim_{x \rightarrow 2} \frac{4x + 2x}{3x - 2x} = \frac{4(2) + 2(2)}{3(2) - 2(2)} = \frac{12}{-2} = \boxed{-6}$$

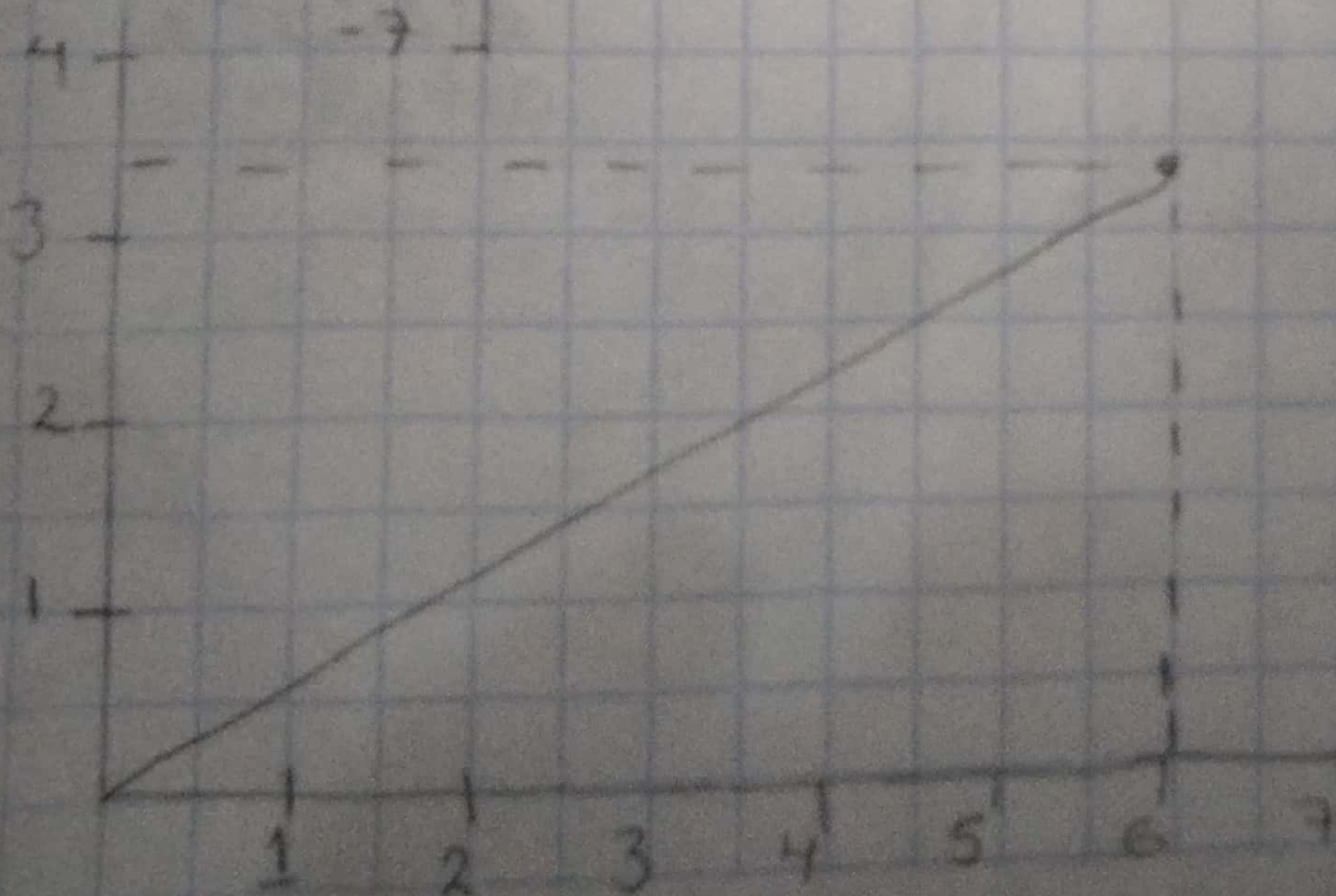
$$\lim_{x \rightarrow 2} [2x]^3 = (2(2))^3 = (4)^3 = 64$$

$$\lim_{x \rightarrow 6} \sqrt{2x} = \sqrt{2(6)} = \sqrt{12} = \sqrt{3 \cdot 4}$$

①



③





# Tarea

$$\lim_{x \rightarrow 7}$$

$$\lim_{x \rightarrow 7} kf(x)$$

$$\lim 35(7) = 245$$

$$\lim_{x \rightarrow 7.5}$$

$$\lim_{x \rightarrow 7.5} kf(x)$$

$$\lim 35(7.5) = 262.5$$

$$\lim_{x \rightarrow 8}$$

$$\lim_{x \rightarrow 8} kf(x)$$

$$\lim 35(8) = 280$$

MCM

$$\begin{array}{r|l} 245 & 5 \\ 49 & 7 \\ 7 & 7 \\ 1 & \end{array}$$

MCM

$$\begin{array}{r|l} 262 & 2 \\ 131 & \end{array}$$

MCM

$$\begin{array}{r|l} 280 & 2 \\ 140 & 2 \\ 70 & 2 \\ 35 & 5 \\ 7 & 7 \\ 1 & \end{array}$$