



Universidad del Sureste
Campus Comitán
Licenciatura en Medicina Humana

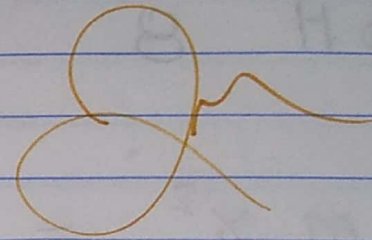
Tema: Poniendo límites
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Natalia
Grupo: "B" Grado: Segundo Semestre
Materia: Biomatemáticas
Nombre del Profesor: Rosvani Margine
Morales Irecta

Comitán de Domínguez, Chiapas a 20 de febrero de 2022.

BIOMATEMÁTICAS

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

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



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

$$\lim_{x \rightarrow 1} \frac{x^2 - 1}{x - 1} = \frac{(1)^2 - 1}{1 - 1} = \frac{0}{0}$$

$$\frac{1-1}{1-1}$$

Ejercicios

$$\lim_{x \rightarrow \text{PH}} x^2$$

PH 6.6

PH 7.6

PH 7.8

PH 8

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

$$2 - \lim_{x \rightarrow 6.6} x^3 = 287.496$$

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

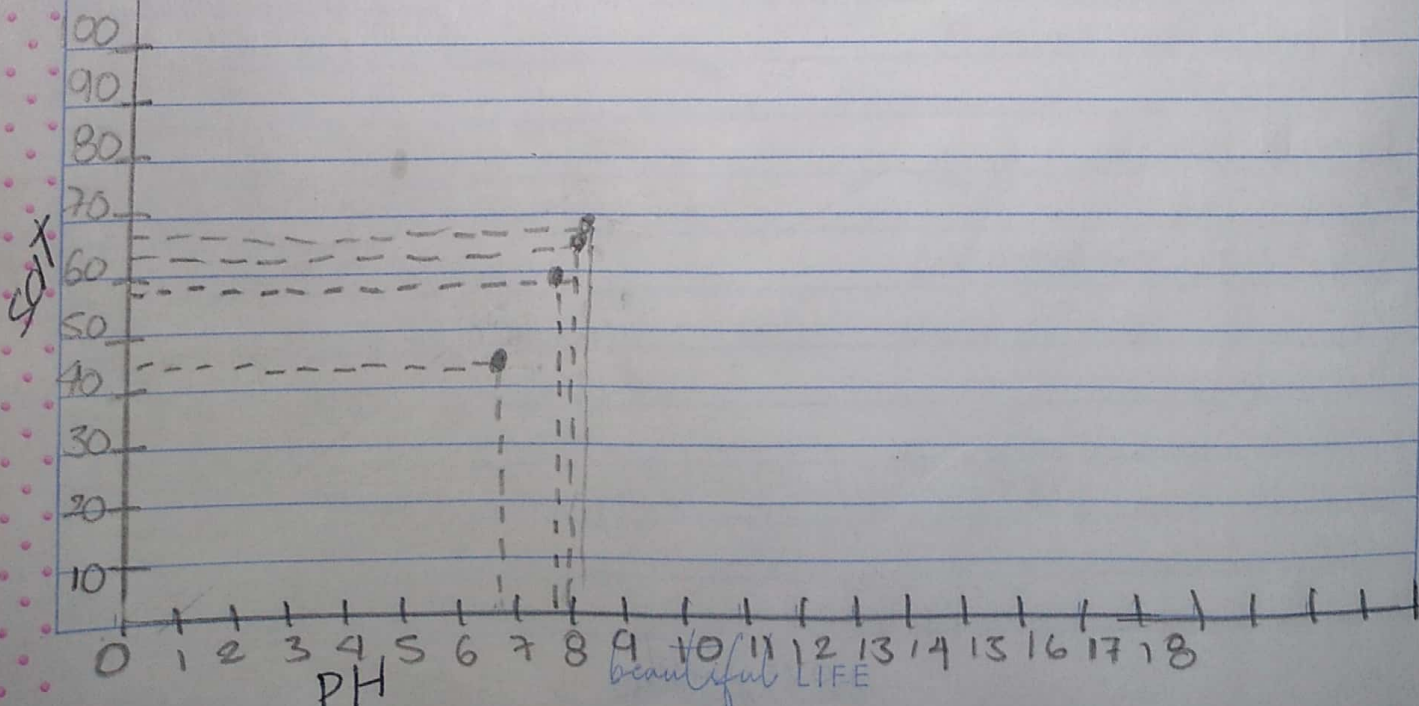
$$2 - \lim_{x \rightarrow 7.6} x^3 = 438.976$$

$$\lim_{x \rightarrow 7.8} x^2 = (7.8)^2 = 60.84$$

$$2 - \lim_{x \rightarrow 7.8} x^3 = 474.552$$

$$\lim_{x \rightarrow 8} x^2 = (8)^2 = 64$$

$$2 - \lim_{x \rightarrow 8} x^4 = 4,096$$



$$1 = \lim_{x \rightarrow 2} \frac{x^2 + x - 6}{x - 2}$$

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

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

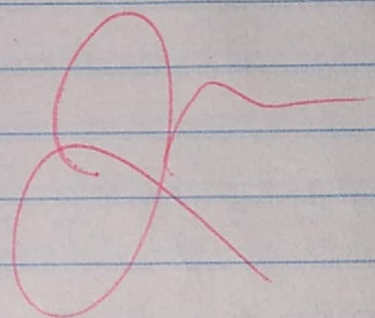
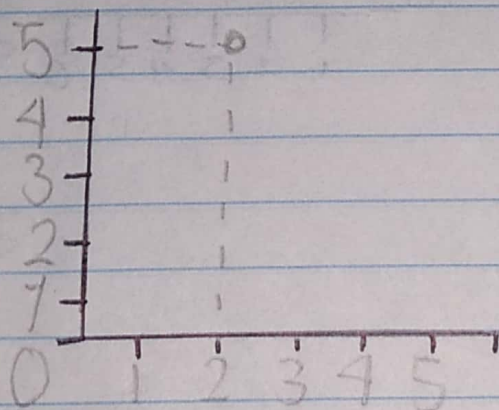
EJERCICIOS

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

$$\text{SOS } \frac{(2)^2 + 2 - 6}{2 - 2}$$

$$\lim_{x \rightarrow 2} \frac{(x-2)(x+3)}{(x-2)} = (x+3) \quad \text{SOS } \frac{4+2-6}{0}$$

$$= 2+3 = 5 \quad \text{SOS} = \frac{6-6}{0} = \frac{0}{0}$$



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

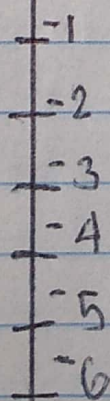
$$\text{SOS} = \frac{(-4)^2 + 3(-4) + 4}{(-4)^2 + 3(-4) - 4}$$

$$\lim = \frac{(x+4)(x+1)}{(x-1)(x+4)}$$

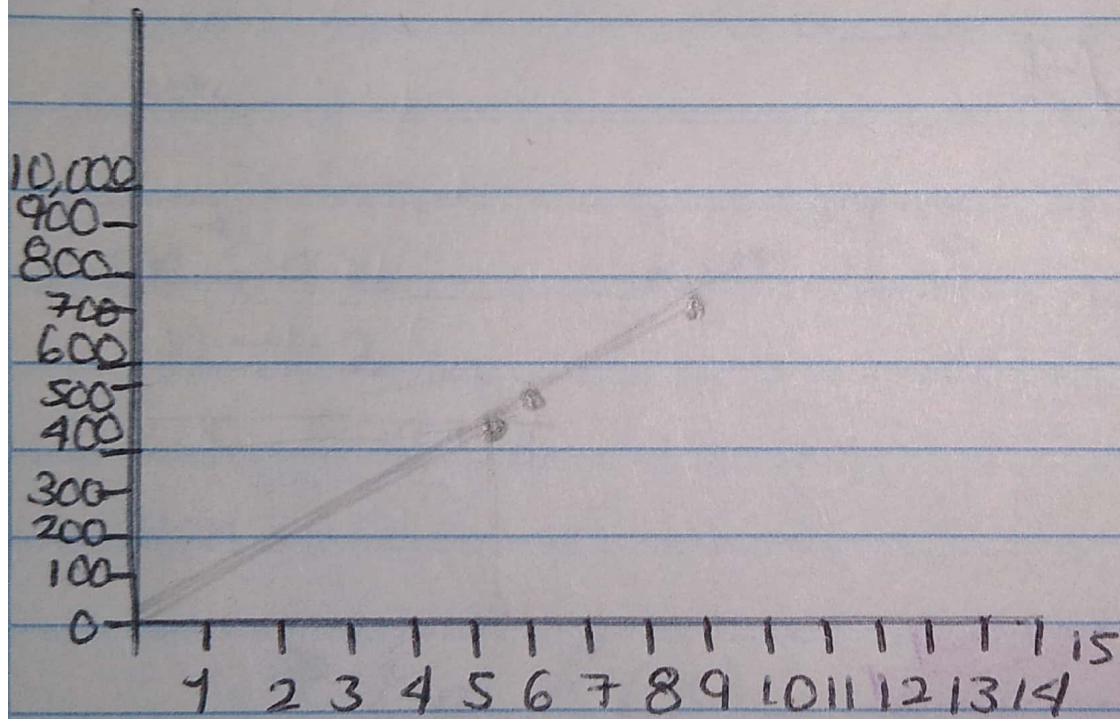
$$= \frac{(x+1)}{(x-1)} = \frac{(-4+1)}{(-4-1)}$$

$$= \frac{-3}{-5} = 0.6$$

$$= \frac{16 - 20 + 4}{16 - 12 - 4} = \frac{0}{0}$$



$$3. \lim_{x \rightarrow 5.5} 80x = 80 \lim_{x \rightarrow 5.5} x = \lim_{x \rightarrow 5.5} 80(x) = 940$$



Propiedades de un limite

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

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

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

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

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

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

$$x \rightarrow 2 = (2)^2 = 4$$

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

$$\lim_{x \rightarrow 4} \sqrt{x} = 2$$

$$x \rightarrow 4$$

$$\lim_{x \rightarrow 3} 9x^2$$

$$k = 9 \lim_{x \rightarrow 3} x^2 = 9(3^2) = 9(9) = 81$$

Ejercicio

$$\lim_{x \rightarrow 8} 6x^2$$

$$6(8)^2 = 6(64) = 384$$

Ejercicio TAREA

pH 6 pH 9 pH 5.5 $x = 4$ $c^{\circ} \text{Sat } O_2 \text{ H}_2\text{O?}$
 $P O_2 \text{ mm Hg}$
 80 k

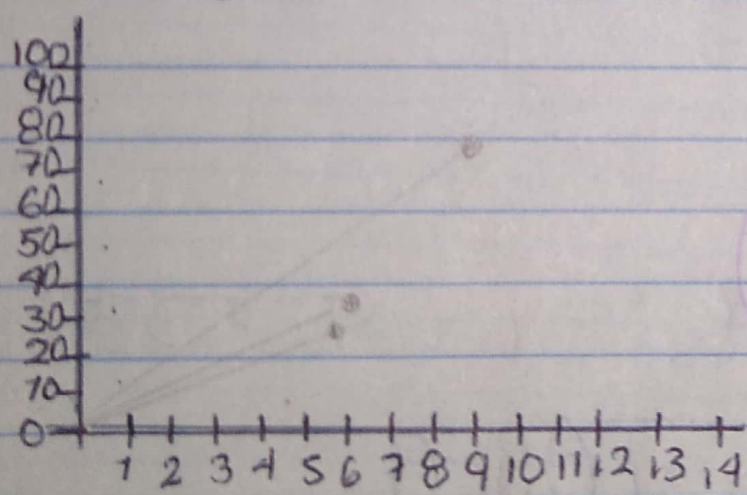
EJERCICIO

pH 6 $x = k$ C Sat O^2 Hb ?
 pH 9 pO^2 mm Hg
 pH 5.5 80 k

$$1 = \lim_{x \rightarrow 6} 6x = 6 \lim_{x \rightarrow 6} x = \lim_{x \rightarrow 6} 6(6) = 36$$

$$2 = \lim_{x \rightarrow 9} 9x = 9 \lim_{x \rightarrow 9} x = \lim_{x \rightarrow 9} 9(9) = 81$$

$$3 = \lim_{x \rightarrow 5.5} 5.5x = 5.5 \lim_{x \rightarrow 5.5} x = \lim_{x \rightarrow 5.5} 5.5(5.5) = 30.25$$



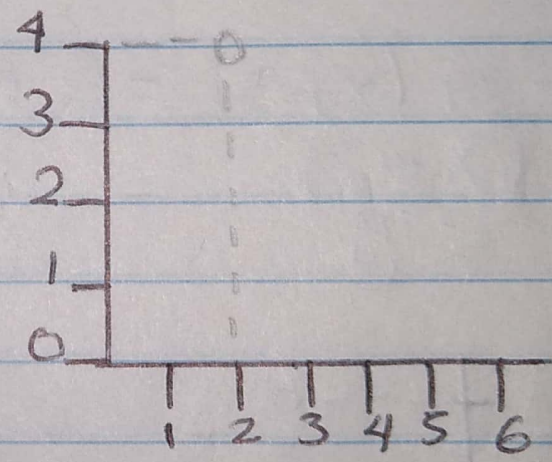
$$1 = \lim_{x \rightarrow 6} 80x = 80 \lim_{x \rightarrow 6} x = \lim_{x \rightarrow 6} 80(6) = 480$$

$$2 = \lim_{x \rightarrow 9} 80x = 80 \lim_{x \rightarrow 9} x = \lim_{x \rightarrow 9} 80(9) = 720$$

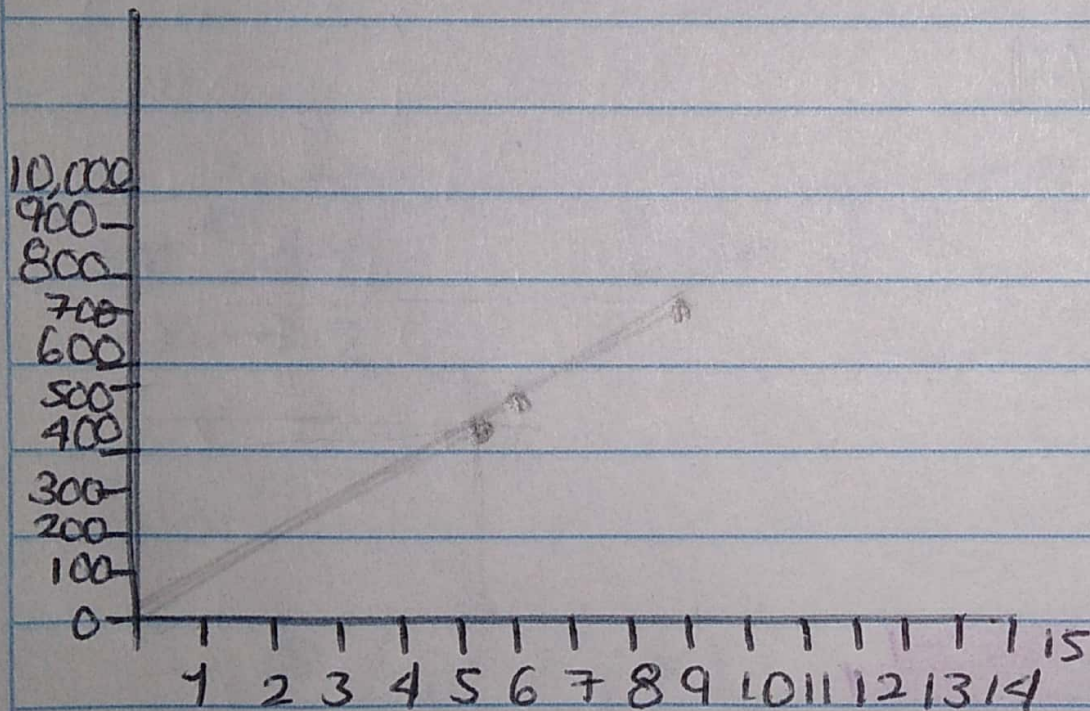
$$\lim_{x \rightarrow 2} \frac{x^2 - 4}{x - 2}$$

SOS $\frac{(2)^2 - 4}{2 - 2} = \frac{4 - 4}{0} = \frac{0}{0}$

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



$$3 = \lim_{x \rightarrow 5.5} 80x = 80 \lim_{x \rightarrow 5.5} x = \lim_{x \rightarrow 5.5} 80(5.5) = 940$$



Ejercicios

18-Febrero-2022

$$\lim_{x \rightarrow 2} 3x + 4x$$

$$\lim 3(2) + 4(2)$$

$$\lim 6 + 8 = 14$$

$$\lim_{x \rightarrow 2} (4x)(3x)$$

$$x \rightarrow 2$$

$$4 \lim_{x \rightarrow 2} x \cdot 3 \lim_{x \rightarrow 2} x$$

$$4(2) \cdot 3(2) =$$

$$8 \cdot 6 = 48$$

$$\lim_{x \rightarrow 4} 3x \cdot 6x$$

$$x \rightarrow 4$$

$$3 \lim_{x \rightarrow 4} x \cdot 6 \lim_{x \rightarrow 4} x$$

$$x = 4 \quad x = 4$$

$$3(4) \cdot 6(4)$$

$$12 \cdot 24 = 288$$

$$\lim_{x \rightarrow 4} \frac{3x}{4x}$$

$$x \rightarrow 4 \quad 4x$$

$$\frac{3(4)}{4(4)} = \frac{12}{16}$$

$$= 0.75$$

$$\lim_{x \rightarrow 5} \frac{3x - 12}{4x - 19}$$

$$x \rightarrow 5 \quad 4x - 19$$

$$\frac{3(5) - 12}{4(5) - 19}$$

$$= \frac{15 - 12}{20 - 19} = \frac{3}{1}$$

$$= 3$$

$$= 3$$

$$= 3$$

$$\lim_{x \rightarrow a} [f(x)]^n = \left[\lim_{x \rightarrow a} f(x) \right]^n$$

$$\lim 2x^3 = (2)(3)^3 = 6^3 = 216$$

Lim

$$\lim_{x \rightarrow 2} \sqrt[3]{4x}$$

$$\lim \sqrt[n]{x}$$

$$\lim \sqrt[n]{a}$$

$$\lim \sqrt[3]{4(2)}$$

$$\lim \sqrt[3]{8} = \sqrt{2} = 2$$

$$\lim f(x)$$

Calcular $\lim_{x \rightarrow 2} f(x)$

$$f(x) = \begin{cases} x^2 & \text{si } x < 2 \\ 4 & \text{si } x = 2 \\ 6 - 2x & \text{si } x > 2 \end{cases}$$