Tema: Poniendo Límites

Materia: Biomatemáticas

Nombre del alumno: Llenifer Yaquelin García Díaz

Grado y grupo: “2” “C”

Nombre del Docente: Rosvani Margine Morales Irecta

Comitán de Domínguez Chiapas a 20 de febrero del 2022.

Ejercicios

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

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

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

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

PH

$\lim_{ph(x) \to 7.2} x^2 = x^2 = (7.2)^2 = 51.84$

$\lim_{ph(x) \to 7.4} x^2 = x^2 = (7.4)^2 = 54.76$

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

$\lim_{ph(x) \to 7.5} x^2 = x^2 = (7.5)^2 = 56.25$

Ph

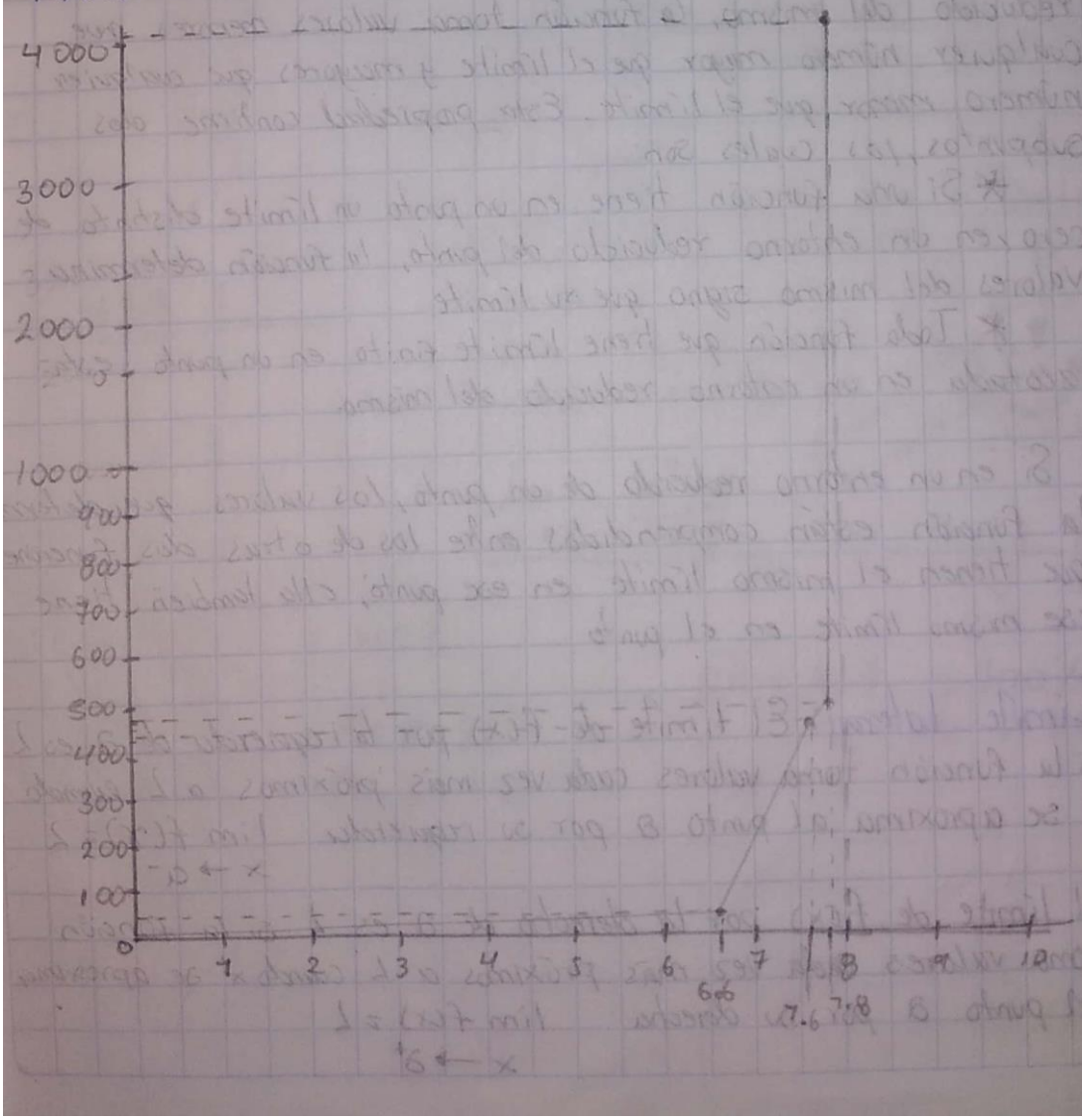
$\lim x^2$
$Ph(x) \to 6.6$
$\lim x^3$
$Ph(x) \to 7.6$
$\lim x^3$
$Ph(x) \to 7.8$
$\lim x^4$
$Ph(x) \to 8$

$x^2 = (6.6)^2 = 43.56$

$x^3 = (7.6)^3 = 438.97$

$x^3 = (7.8)^3 = 474.55$

$x^4 = (8)^4 = 4,096$



4096	2
2048	2
1024	2
512	2
256	2
128	2
64	2
32	2
16	2
8	2
4	2
2	2
1	

$12 \times 2 = 24$ 2

$\lim_{ph \to 8} x^4 = (8)^4 = 4096$

MCM o MCD = 2

ph = 8 → 100%

2 → x = 25%

Tarea

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

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

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

439	

474.55 = 473

473	11
43	43
1	

MCM = 24

MCD = 5

ph = 7.8 = 100%

S = x = 6

Propiedades

$\lim_{x \to a} C = C$ $\quad \lim_{x=3} 5 = 5$

$\lim_{x \to a} x = a$ $\quad \lim_{x \to 3} x = 3$

$\lim_{x \to a} x^n = a^n$ $\quad \lim_{x \to 3} x^2 = 3^2 = 9$

$\lim_{x \to a} \sqrt[n]{x} = \sqrt[n]{a}$ $\quad \lim_{x \to 2} \sqrt[3]{2} = 1.41$

$\lim_{x \to 2} (4x^2) = \overset{C}{4}\,\overset{f(x)}{x^2} = 4 \lim_{x \to 2} x^2 = 4(2)^2 = 4(4) = 16$

1. $\lim_{x \to 2} K[f(x)] = K \lim_{x \to 2} (Fx) = K2$

- $\lim_{x \to 2} 3x^3 = 3 \lim_{x \to 2} x^3 = 3(2)^3 = 3(8) = 24$

- $\lim_{x \to 4} 6x^2 = 6 \lim_{x \to 4} x^2 = 6(4)^2 = 6(16) = 96$

$\lim_{x \to a} \sqrt[n]{x} = \sqrt[n]{a} = \overset{\text{Ejemplo:}}{\lim_{x \to 4} \sqrt{x}} = \sqrt{4} = 2$

2. $\lim_{x \to 2} f(x) + g(x) = \lim_{x \to 3} f(x) \pm \lim_{x \to 3} g(x) = L \pm M$

$\lim_{x \to 3} 3x + 4x = 3 \lim_{x \to 3} x + 4 \lim_{x \to 3} x =$

$= 3(3) + 4(3) = 9 + 12 = 21 \quad 9 - 12 = -3$

3. $\lim_{x \to 2} f(x) \cdot g(x) = \lim_{x \to 2} f(x) \cdot \lim_{x \to 2} g(x) = L \cdot M$

$\lim_{x \to 2} 4x^2 \cdot 3x^2 = 4 \lim_{x \to 2} x^2 \cdot 3 \lim_{x \to 2} x^2 =$

$4(2)^2 \cdot 3(2)^2 = 4(4) \cdot 3(4) = 16 \cdot 12 = 192$

4. $\lim_{x \to 2} f(x) \div g(x) = \lim_{x \to 2} (f(x)) \div \lim_{x \to 2} g(x) = L \div M, \; M \neq 0$

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

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

5. $\lim_{x \to a} x^n = a^n$

6. Si K es una constante $\lim_{x \to a} K = K$.

¿Sut O^2 Hb?

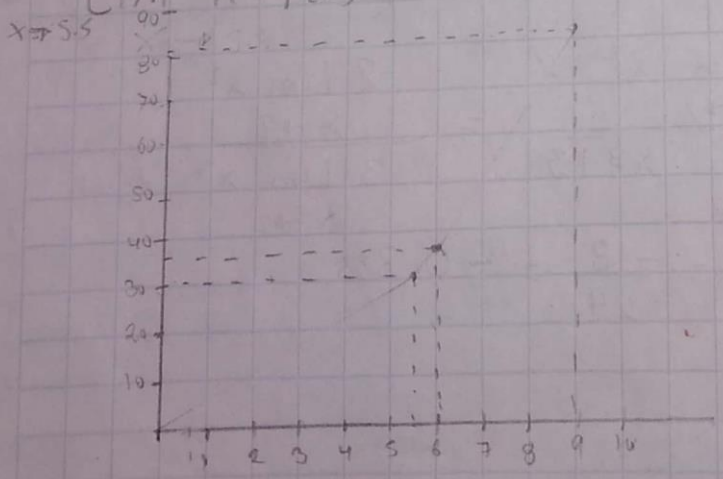
ph = 6
ph = 9
p = 5.5

$\lim_{x \to 6} K f(x)$

$\lim 6(6) = 36$

$\lim_{x \to 9} K f(x) = 9(9) = 81$

$\lim_{x \to 5.5} K f(x) = 5.5(5.5) = 30.25$



$PO^2 (mmHg) = 80$

$\lim_{x \to 6} k f(x) = \lim 80(6) = 480$

$\lim_{x \to 9} k (f(x)) = \lim 80(9) = 720$

$\lim_{x \to 5.5} k f(x) = \lim 80(5.5) = 440$

480	2
240	2
120	2
60	2
30	2
15	3
5	5
1	

ph = 6 = 100%
ph 2 = 33.33%

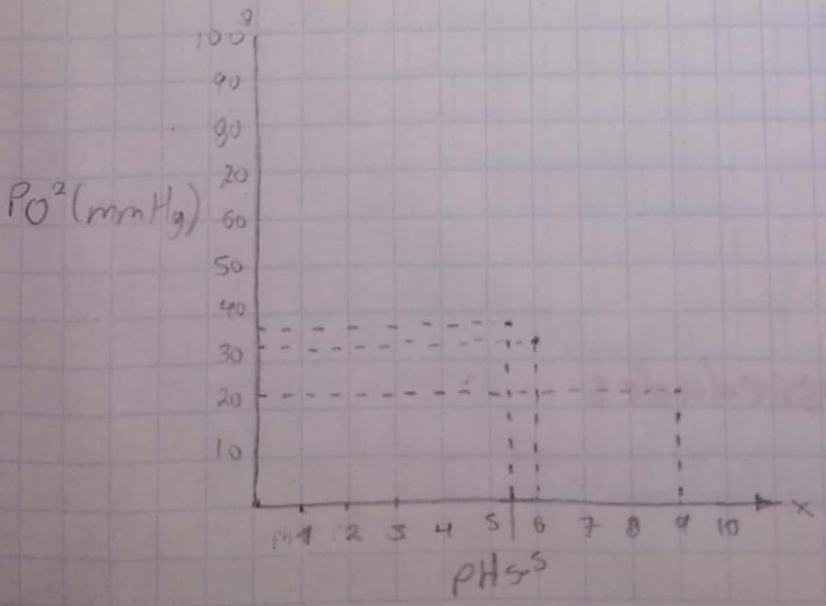
720	2
360	2
180	2
90	2
45	3
15	3
5	5

ph · 9 = 100%
ph 2 = 22.2

440	2
220	2
110	2
55	5
11	11

ph = 5.5 = 100%
ph = 2 = 36.36

Lim



Propiedades de límites

VERYGREEN

* Factorización

- $\lim_{x \to 2} \frac{x^2+x-6}{x-2} = \lim \frac{(x+3)(x-2)}{x-2} = (x+3)$

$2+3=5$

- $\lim_{x \to 2} \frac{2x^2+5x+4}{x^2+3x-4} = \lim \frac{(x+1)(x+1)}{(x-1)(x+4)} = \frac{(x+1)}{(x-1)} \frac{2+1}{2-1}$

$\frac{3}{1} = 3$

- $\lim_{x \to 2} \frac{x^2-4}{x-2} = \lim \frac{(x+2)(x-2)}{x-2} = (x+2) = 2+2 = 4$

- $\lim_{x \to 2} \frac{x^2-5x+6}{x^2-12x+20} = \lim \frac{(x-2)(x-3)}{(x-2)(x-10)} = \frac{(x-3)}{(x-10)} = \frac{2-3}{2-10} = \frac{-1}{-8}$

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

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

- $\lim_{x \to 3} x^2 = \lim (3^2) = (3)(3) = 9$

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

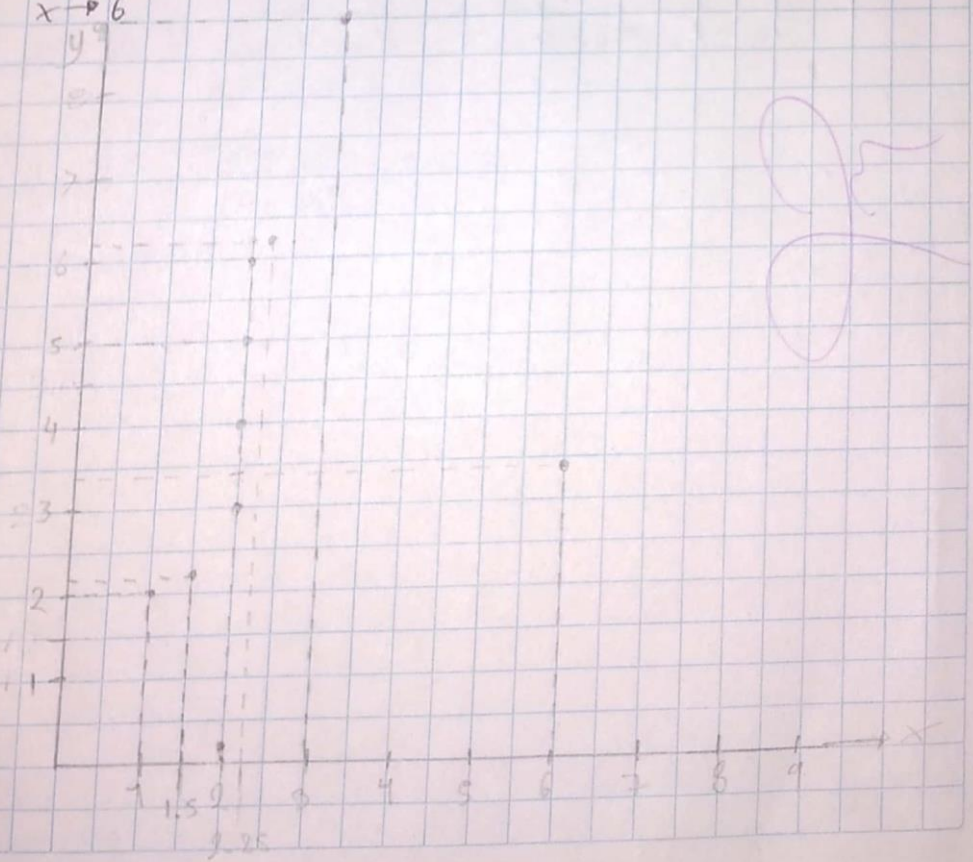
Propiedades

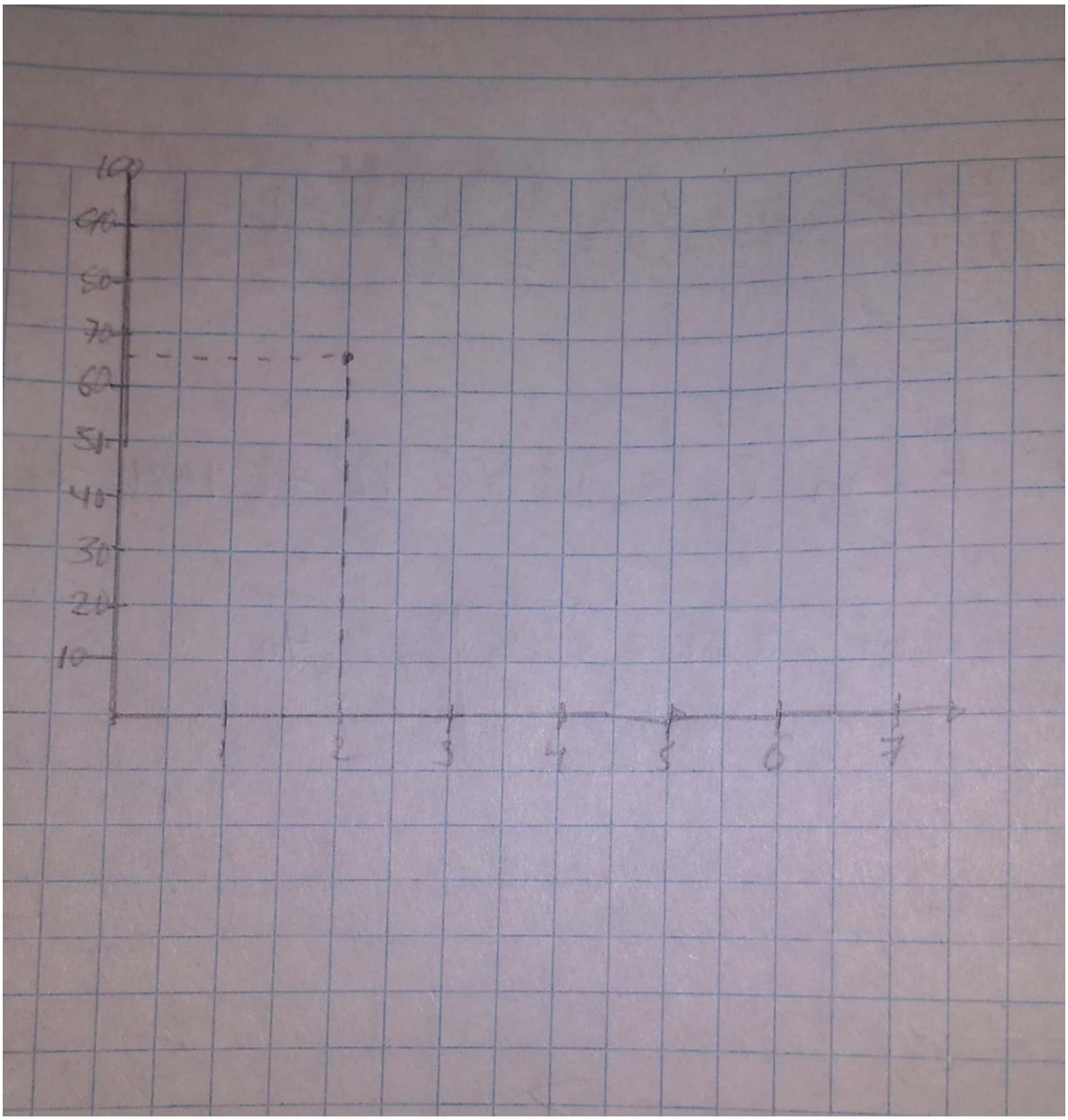
- $\lim_{x \to 2} \frac{4x+2x}{3x-2x} = \frac{\lim 4x + \lim 2x}{\lim 3x - \lim 2x}$

$$\frac{4\lim x + 2\lim x}{3\lim x - 2\lim x} = \frac{4(2)+2(2)}{3(2)-2(2)} = \frac{8+4}{6-4} = \frac{12}{2} = 6$$

- $\lim_{x \to 2} [2x)^3 = \lim [2(2)]^3 = [4)^3 = (4 \cdot 4 \cdot 4) = 64$

- $\lim_{x \to 6} \sqrt{2x} = \lim \sqrt{2(6)} = \sqrt{12} = 3.46$




60
50
40
30
20
10
1
2
3
4
5
6
7

PO^2 mmH^2 35

PH 7
pH 7.5
pH 8

ph 7 = $\lim_{ph=x\to 7} K(x) = \lim 35(7) = 245$

ph 7.5 = $\lim_{pH=x\to 7.5} K(x) = \lim 35(7.5) = 262.5$

ph 8 = $\lim_{pH=x\to 8} K(x) = \lim 35(8) = 280$

245 | 5
49 | 7
0 | 1

262 | 2
13 | 131
0 | 1

280 | 2
40 | 140
0 | 70
0 | 35
| 1