Nombre del trabajo: Limites unilaterales y propiedades de los limites

Materia: Biomatemáticas

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Grado: 2°

Grupo: C

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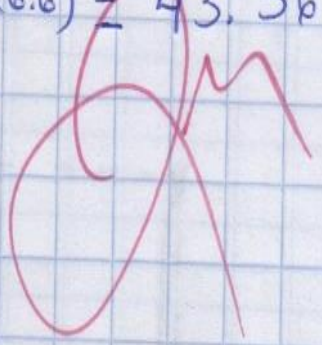
Limites (Ejercicios)

1.- $\lim_{x \to 6.6_{pH}} x^2$

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



2.- $\lim_{x \to 7.6} x^3$

$\lim x^3 = (7.6)^3 = (7.6)(7.6)(7.6) = 4389.76$

3.- $\lim_{x \to 7.8} x^3$

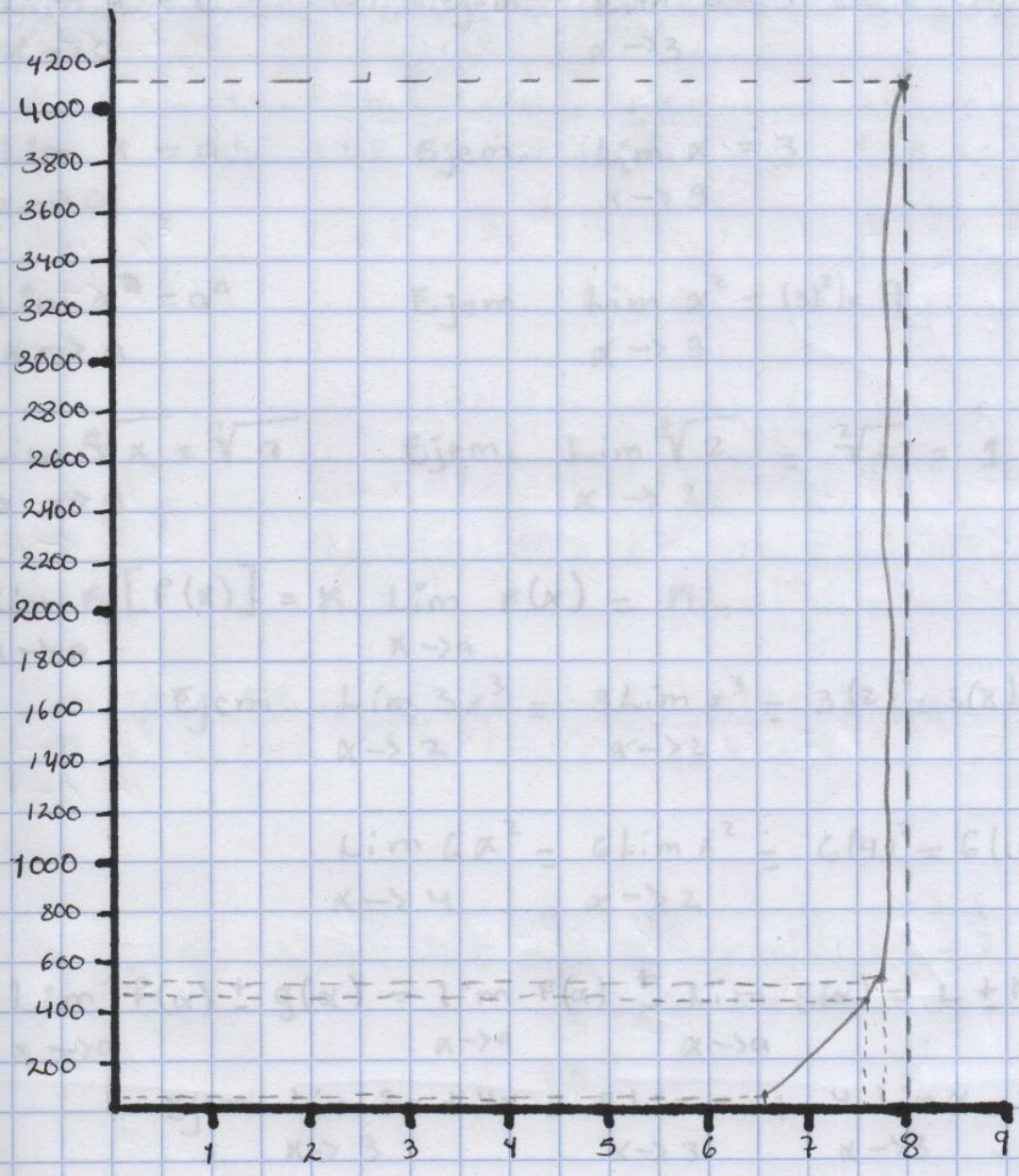
$\lim x^3 = (7.8)^3 = (7.8)(7.8)(7.8) = 474.552$

4.- $\lim_{x \to 8} x^4$

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

Propiedades de los límites

15/02/2022



Propiedades de los límites

15/02/2022

① $\lim_{x \to a} C = C$ Ejem: $\lim_{x \to 3} 5 = 5$

② $\lim_{x \to a} x = a$ Ejem. $\lim_{x \to 3} x = 3$

③ $\lim_{x \to a} x^n = a^n$ Ejem. $\lim_{x \to 3} x^2 = (3)^2 = 9$

④ $\lim_{x \to a} \sqrt[n]{x} = \sqrt[n]{a}$ Ejem. $\lim_{x \to 2} \sqrt[2]{2} = \sqrt[2]{2} = 1.41$

⑤ $\lim_{x \to a} K[F(x)] = K \lim_{x \to a} F(x) = KL$

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

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

⑥ $\lim_{x \to a} F(x) \pm g(x) = \lim_{x \to a} F(x) \pm \lim_{x \to a} g(x) = L \pm M$

Ejem. $\lim_{x \to 3} 3x + 4x = 3\lim_{x \to 3} x + 4\lim_{x \to 3} x = 3(3) + 4(3) = 21$

⑦ $\lim_{x \to a} F(x) \cdot g(x) = \lim_{x \to a} F(x) \cdot \lim_{x \to a} g(x) = L \cdot M$

Ejem. $\lim_{x \to 2} 4x^2 \cdot 3x^2 = 4\lim_{x \to 2} x^2 \cdot 3\lim_{x \to 2} x^2 = 4(2)^2 \cdot 3(2)^2 =$

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

$16 \cdot 12 = 192$

⑧ $\lim_{x \to a} f(x) \div g(x) = \lim_{x \to a} f(x) \div \lim_{x \to a} g(x) = L \div M, \quad M \neq 0$

Ejem. $\lim_{x \to 2} \frac{x^2 - 2}{x^3 + 3} = \frac{-2\left(\lim_{x \to 2} x^2\right)}{3\left(\lim_{x \to 2} x^3\right)} = \frac{-2(2)^2}{3(2)^3} = \frac{-2(4)}{3(8)} = \frac{-8}{24} = -0.333$

Ejemplos. pH (6, 9, 5.5)

① $\lim_{x \to 6} K[f(x)] = 6 \lim_{x \to 6} (6) = (6)(6) = 36$

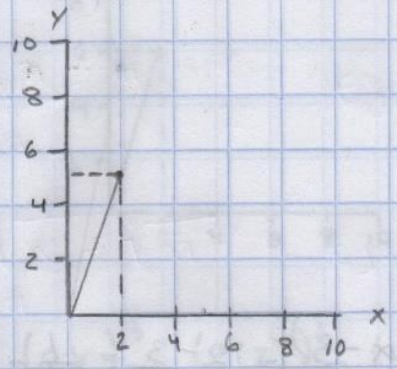
② $\lim_{x \to 9} K[f(x)] = 9 \lim_{x \to 9} (9) = (9)(9) = 81$

③ $\lim_{x \to 5.5} K[f(x)] = 5.5 \lim_{x \to 5.5} (5.5) = (5.5)(5.5) = 30.25$

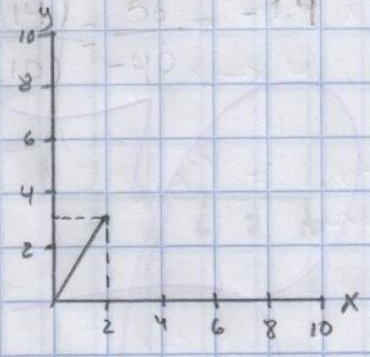
$\lim_{x \to 6} 80x = 80 \lim_{x \to 6} x = 80(6) = 480 \div 2$ 80 → 100%, 2 → 2.5%.

Ejercicios

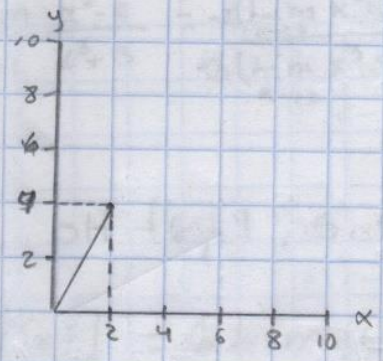
① $\lim_{x \to 2} \frac{x^2 + x - 6}{x - 2} = \frac{(x+3)(x-2)}{x-2} = 2 + 3 = 5$



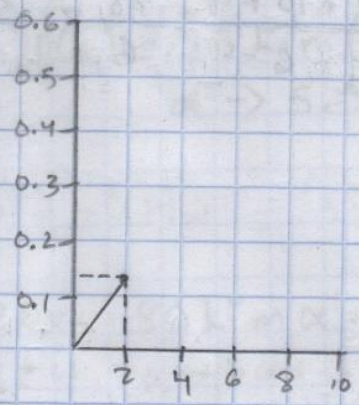
② $\lim_{x \to 2} \frac{x^2 + 5x + 4}{x^2 + 3x - 4} = \frac{\lim (2)^2 + 5(2) + 4}{(2)^2 + 3(2) - 4} = \frac{4 + 10 + 4}{4 + 6 - 4} = \frac{18}{6} = 3$



③ $\lim_{x \to 2} \frac{x^2 - 4}{x - 2} = \frac{-4 \lim x^2}{-2 \lim x} = \frac{-4(2)^2}{-2(2)} = \frac{-4(4)}{-4} = \frac{-16}{-4} = 4$

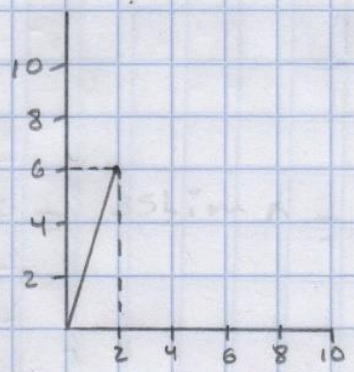


④ $\lim_{x \to 2} \frac{x^2 - 5x + 6}{x^2 - 12x + 20} = \frac{(x-2)(x-3)}{(x-10)(x-2)} = \frac{(x-3)}{(x-10)} = \frac{2-3}{2-10} = \frac{1}{8} = 0.125$

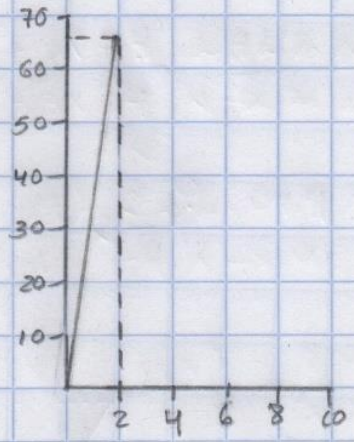


Ejercicios

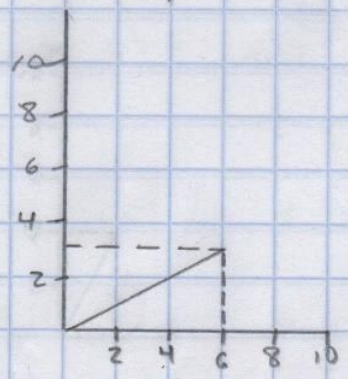
① $\lim_{x \to 2} \frac{4x + 2x}{3x - 2x} = \lim \frac{4(2) + 2(2)}{3(2) - 2(2)} = \frac{8 + 4}{6 - 4} = \frac{12}{2} = 6$



② $\lim_{x \to 2} (2x)^3 = (2(2))^3 = (4)^3 = (4)(4)(4) = 64$



③ $\lim_{x \to 6} \sqrt{2x} = \lim \sqrt{2(6)} = \sqrt{12} = 3.46$



Ejercicios (pH) ¿Sat O^2 Hb PO^2 mm H^2? = 35

① $\lim_{x \to 7} 35x = 35 \lim_{x \to 7} x = 35(7) = 245 = 35 \to 100 = 20$ //
$7 \times = 20$

② $\lim_{x \to 7.5} 35x = 35 \lim_{x \to 7.5} x = 35(7.5) = 262 = 35 \to 100 = 21.42$
7.5×21.42

③ $\lim_{x \to 8} 35x = 35 \lim_{x \to 8} x = 35(8) = 280 = 35 \to 100 = 22.85$
$8 \times = 22.85$