Diplomado en **Probabilidad** e **Inferencia Básica**

Quiz 3 - Límites

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① $$\lim_{x\to 2} \sqrt{\frac{x^3+2x+3}{x^2+5}} = \sqrt{\frac{(2)^3+2(2)+3}{(2)^2+5}} = \sqrt{\frac{8+4+3}{4+5}} = \sqrt{\frac{15}{9}} = \sqrt{\frac{5}{3}}$$

② $$g(x) = \frac{\sqrt{x}-2}{x-4}$$

$g(3) = \sqrt{3}-2/3-4 = \sqrt{3}-2/-1 = 0.2679$

$g(3.5) = \sqrt{3.5}-2/3.5-4 = \sqrt{35}-2/-0.5 = 0.2583$

$g(3.9) = \sqrt{3.9}-2/3.9-4 = \sqrt{3.9}-2/-0.1 = 0.2515$

$g(3.99) = \sqrt{3.99}-2/3.99-4 = \sqrt{3.99}-2/-001 = 0.2501$

$g(3.999) = \sqrt{3.999}-2/3.999-4 = \sqrt{3999}-2/-0.001 = 0.2500$

La función no está definida en ese punto pero tiende a $0.25 = (1/4)$

③ $$\lim_{x\to 4} \frac{\sqrt{x}-2}{x-4} = \lim_{x\to 4} \frac{\sqrt{x}-2}{x-4}\frac{(\sqrt{x}+2)}{(\sqrt{x}+2)} = \lim_{x\to 4} \frac{x-4}{(x-4)(\sqrt{x}+2)}$$

$$= \lim_{x\to 4} \frac{1}{\sqrt{x}+2} = \frac{1}{\sqrt{4}+2} = \frac{1}{2+2} = \frac{1}{4} = 0.25$$