854

$$\lim_{x\to 0} \frac{1}{x}\left(e^x\sqrt{x^2+x+1} - \frac{\sqrt{5x^2+2x+1}}{1+x}\right) =$$

$$= \lim_{x\to 0} \frac{e^x(1+x)\sqrt{x^2+x+1} - \sqrt{5x^2+2x+1}}{x(1+x)} =$$

$$= \lim_{x\to 0} \frac{\left[e^x(1+x)\sqrt{x^2+x+1} - \sqrt{5x^2+2x+1}\right]\left[e^x(1+x)\sqrt{x^2+x+1} + \sqrt{5x^2+2x+1}\right]}{x(1+x)\left[e^x(1+x)\sqrt{x^2+x+1} + \sqrt{5x^2+2x+1}\right]} =$$

$$\left\{(1+0)\left[e^0(1+0)\sqrt{0+0+1} + \sqrt{0+0+1}\right] = 1(1+1) = 2\right\}$$

$$= \frac{1}{2}\lim_{x\to 0} \frac{e^{2x}(1+x)^2(x^2+x+1) - 5x^2 - 2x - 1}{x} =$$

$$\frac{1}{2}\lim_{x\to 0}\frac{e^{2x}(1+2x+x^2)(x^3+x+1)-5x^2-2x-1}{x}=$$

$$=\frac{1}{2}\lim_{x\to 0}\frac{e^{2x}(x^2+x+1+2x^3+2x^2+2x+x^4+x^3+x^2)-5x^2-2x-1}{x}=$$

$$=\frac{1}{2}\lim_{x\to 0}\frac{e^{2x}(x^4+3x^3+4x^2+3x+1)-5x^2-2x-1}{x}=$$

$$=\frac{1}{2}\lim_{x\to 0}\left[2\,\frac{e^{2x}-1}{2x}+e^{2x}(x^3+3x^2+4x+3)-5x-2\right]=$$

$$=\frac{1}{2}\left[2\cdot 1+e^{0}(0+0+0+3)-0-2\right]=\frac{1}{2}\left[2+3-2\right]=\frac{3}{2}$$

1- alt. geek disquisizione su termini generali
2- rec. doubling gioco d'azzardo
3. rec. music. makers. guitar

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