B

9) $\lim_{x\to -1} \frac{\sqrt[3]{x}+1}{x+1} = \left(\frac{0}{0}\text{ f.i}\right)$ (N.B $x+1 = \sqrt[3]{x^3}+1^3$ SOMMA TRA CUBI) $=$

$$= \lim_{x\to -1} \frac{\cancel{(\sqrt[3]{x}+1)}}{\cancel{(\sqrt[3]{x}+1)}(\sqrt[3]{x^2}-\sqrt[3]{x}+1)} = \frac{1}{1+1+1} = \frac{1}{3}$$

10) $\lim_{x\to \frac{\pi}{4}} \frac{1-tg x}{1-cotg x} = \left(\frac{1-1}{1-1} = \frac{0}{0}\text{ f.i}\right) = \lim_{x\to\frac{\pi}{4}} \frac{1-\frac{sen x}{cos x}}{1-\frac{cos x}{sen x}} =$

$$= \lim_{x\to\frac{\pi}{4}} \frac{\frac{cos x - sen x}{cos x}}{\frac{sen x - cos x}{sen x}} = \lim_{x\to\frac{\pi}{4}} \frac{-\cancel{(sen x - cos x)}}{cos x} \cdot \frac{sen x}{\cancel{(sen x - cos x)}} = \frac{-sen\frac{\pi}{4}}{cos\frac{\pi}{4}} = -1$$

11) $\lim_{x\to \frac{\pi}{3}^+} e^{\frac{1}{2cos x-1}} = e^{\frac{1}{2\cdot\frac{1}{2}-1}} = e^{\frac{1}{0^-}} = e^{-\infty} = 0$

12) $\lim_{x\to 1} \frac{sen(x-1)}{2x-2} =$ (LIMITE NOTEVOLE) $= \lim_{x\to 1} \frac{sen(x-1)}{2(x-1)} = \frac{1}{2}$

$\to 1$

13) $\lim_{x\to +\infty} \left(\sqrt{x+1}-\sqrt{x+2}\right) = (\infty-\infty\text{ f.i}) = \lim_{x\to+\infty} \frac{\cancel{x}+1-\cancel{x}-2}{\sqrt{x+1}+\sqrt{x+2}} = \frac{-1}{+\infty} = 0$

14) $\lim_{x\to\infty} \sqrt{9x^2+3x-1} - \sqrt{9x^2+1} = (\infty-\infty\text{ f.i}) =$ (razionalizzare)

$$= \lim_{x\to\infty} \frac{(\cancel{9x^2}+3x-1-\cancel{9x^2}-1)}{\sqrt{9x^2+3x-1}+\sqrt{9x^2+1}} = \frac{3x-2}{|x|(\sqrt{9}+\sqrt{9})} = \frac{3x-2}{|x|\cdot 6} =$$

$= \begin{cases} x\to+\infty = \frac{3x-2}{6x} = \frac{1}{2} \\ x\to-\infty = \frac{3x-2}{-6x} = -\frac{1}{2} \end{cases}$

15) $\lim_{x\to 0} \frac{x\,tg x}{\log(1+3x^2)} =$ LIMITE NOTEVOLE $= \lim_{x\to 0} \frac{\frac{\cancel{x}\,tg x}{3x^{\cancel{2}}}}{\frac{\log(1+3x^2)}{3x^2}} = \frac{1}{3}$

$\to 1$ $\to 1$

16) $\lim_{x\to+\infty} \frac{3e^x-5}{1+4e^x} = \left(\frac{\infty}{\infty}\text{ f.i}\right) = \frac{3}{4}$ $\left(e^x = t \quad \frac{3t-5}{4t+1} \to \text{stesso grado}\right)$