correz. A-K, pari

1) $\lim_{x\to-\infty} \frac{7x-1}{\sqrt{3x^2+4}-\sqrt{3x^2+2}} = \lim_{x\to-\infty} \frac{(7x-1)\left(\sqrt{3x^2+4}+\sqrt{3x^2+2}\right)}{\cancel{3x^2}+4-\cancel{3x^2}-2} =$

$= \frac{(-\infty)(+\infty)}{2} = -\infty$

$\lim_{x\to 0} \frac{e^{8x^2}-\cos 5x}{3\sin^4 x+\log(1+tg^2 x)} = \lim_{x\to 0}\left(8x^2\frac{e^{8x^2}-1}{8x^2}+\frac{1-\cos 5x}{25x^2}\cdot 25x^2\right)\cdot$

$\cdot \frac{1}{3\frac{\sin^4 x}{x^4}\cdot x^4+\log\frac{(1+tg^2 x)}{tg^2 x}\cdot\frac{tg^2 x}{x^2}\cdot x^2} =$

$= \lim_{x\to 0} \frac{\cancel{x^2}\left[8\cdot\frac{e^{8x^2}-1}{8x^2}+\frac{1-\cos 5x}{25x^2}\cdot 25\right]}{\cancel{x^2}\left[3x^2\cdot\frac{\sin^4 x}{x^4}+\frac{\log(1+tg^2 x)}{tg^2 x}\cdot\frac{tg^2 x}{x^2}\right]} = \frac{8+\frac{25}{2}}{3\cdot 0+1} = \frac{41}{2}$

2) $f(x) = \frac{\log|x-2|}{e^{-x}}$ $\qquad |x-2|>0 \Leftrightarrow |x-2|\neq 0 \Leftrightarrow x\neq 2$

$D_f = \mathbb{R}\setminus\{2\}$

$g(x) = \sqrt{\left(\frac{5}{2}\right)^{2x}-\frac{2}{5}}$ $\qquad \left(\frac{5}{2}\right)^{2x}-\frac{2}{5}\geq 0 \Leftrightarrow \left(\frac{5}{2}\right)^{2x}\geq\left(\frac{5}{2}\right)^{-1} \Leftrightarrow 2x\geq -1$

$D_g = \left[-\frac{1}{2}, +\infty\right[$