AS1 - Prof. Sávio

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Questão 2

a) $\lim\limits_{x \to 0} \dfrac{x^2-x}{sen(3x)} \overset{\text{L'hospital}}{=} \lim\limits_{x \to 0} \dfrac{2x-1}{cos(3x) \cdot 3} = \dfrac{2 \cdot 0 - 1}{cos(3 \cdot 0) \cdot 3} = \dfrac{-1}{3}$

$\lim\limits_{x \to 0} \dfrac{x^2-x}{sen(3x)} = \dfrac{-1}{3}$

b) $\lim\limits_{x \to 1} \dfrac{x^2-x}{sen(3x)} = \dfrac{1^2-1}{sen(3)} = 0$

$\lim\limits_{x \to 1} \dfrac{x^2-x}{sen(3x)} = 0$

c) $\lim\limits_{x \to -1} \dfrac{\sqrt{x^2-1} - \sqrt{2}}{x^2-1}$

$\lim\limits_{x \to -1^-} \dfrac{\overset{0}{\sqrt{x^2-1}} - \sqrt{2}}{x^2-1} = -\infty$

   se aproxima de 0 sendo positivo

$\lim\limits_{x \to -1^+} \dfrac{\overset{0}{\sqrt{x^2-1}} - \sqrt{2}}{x^2-1} = +\infty$

   se aproxima de 0 sendo negativo