

اقتراح الأستاذ عبدالواحد و فائق

احسب النهايات التالية :

$$\lim_{x \rightarrow +\infty} \left(\frac{3x^2 - 5x}{x - 5} \right); \lim_{x \rightarrow +\infty} \left(\sqrt{(x+1)^3} - \sqrt{x^3} \right); \lim_{x \rightarrow 0} \left(\frac{1}{x^4} \right)$$

$$\lim_{x \rightarrow 5} \left(\frac{\sqrt{2x-1} - 3}{x-5} \right); \lim_{x \rightarrow 0} \sqrt{\frac{1+x}{1-x}}; \lim_{x \rightarrow -1} \left(\frac{x+1}{x^2-1} \right)$$

$$\lim_{x \rightarrow 1} \left(\frac{x-1}{x^2-1} \right); \lim_{x \rightarrow -\infty} \left(\frac{2x - \sqrt{x}}{x-1} \right); \lim_{x \rightarrow +\infty} \left(\sqrt{x^2+x} - x \right)$$

$$\lim_{x \rightarrow -\infty} \left(\sqrt{x^2+x} - x \right); \lim_{x \rightarrow +\infty} \left(\sqrt{x^2+2x} - x \right); \lim_{x \rightarrow -\infty} \left(\sqrt{x^2+1} - x \right)$$

$$\lim_{x \rightarrow 1^+} \left(\frac{\sqrt{x-1}}{x-1} \right); \lim_{x \rightarrow 4} \left(\frac{\sqrt{x-2}}{\sqrt{2x^2+4}-6} \right); \lim_{x \rightarrow 1} \left(x \sqrt{\frac{x+1}{x^3-1}} \right)$$

$$\lim_{x \rightarrow +\infty} \frac{\sqrt{x-1}}{x-1}; \lim_{x \rightarrow +\infty} \frac{\sqrt{x^2+3x-1}}{x}; \lim_{x \rightarrow -\infty} \frac{\sqrt{x^2+3x-1}}{x}$$

$$\lim_{x \rightarrow \pm\infty} \frac{\sqrt{x^2+16} - \sqrt{x^2+x-2}}{x(x-2)}; \lim_{x \rightarrow \pm\infty} (2x+1 + \sqrt{x^2+x-2})$$

$$\lim_{x \rightarrow \pm\infty} \left(x \sqrt{\frac{x+1}{x^3-1}} \right); \lim_{x \rightarrow 3} \frac{\sqrt{x+6}-3}{\sqrt{4x-3}-x}; \lim_{x \rightarrow +\infty} \frac{\sqrt{x+6}-3}{\sqrt{4x-3}-x}$$

$$\lim_{x \rightarrow 2} \left(\frac{\sqrt{3x^2-4x+1} - \sqrt{x^2+1}}{\sqrt{-x^2-x+12} - \sqrt{x^2+x}} \right); \lim_{x \rightarrow 1} \frac{\sqrt{x^2+3x-3}-1}{x-1};$$

$$\lim_{x \rightarrow +\infty} (x^2 + \sin x); \lim_{x \rightarrow +\infty} \left(\frac{\sin x}{\sqrt{x}} \right); \lim_{x \rightarrow 0} \frac{1 - \cos x}{x}$$

$$\lim_{x \rightarrow 0} \frac{1 - \cos x}{\sin x}; \lim_{x \rightarrow 0} \frac{1 - \cos(\sin x)}{1 - \cos^2 x}; \lim_{x \rightarrow \frac{\pi}{4}} \left(\frac{\tan^2 x - 1}{x - \frac{\pi}{4}} \right)$$

$$\lim_{x \rightarrow \frac{\pi}{3}} \left(\frac{2 \cos x - 1}{\sin x - \frac{\sqrt{3}}{2}} \right); \lim_{x \rightarrow 0^+} \frac{\sin x}{\sqrt{x}}; \lim_{x \rightarrow \frac{\pi}{2}} (1 + \tan^2 x)$$

$$\lim_{x \rightarrow +\infty} \left(\frac{3x-5}{x+1} - \frac{\sin x}{x} \right); \lim_{x \rightarrow \frac{\pi}{4}} \left(\frac{2 \sin x - \sqrt{2}}{\tan x - 1} \right); \lim_{x \rightarrow -\infty} \left(\frac{x^2}{\sqrt{x^4}} \right)$$

$$\lim_{x \rightarrow \frac{\pi}{2}} \left(\frac{\cos x}{x - \frac{\pi}{2}} \right); \lim_{x \rightarrow +\infty} \left(x \sin \frac{1}{x} \right); \lim_{x \rightarrow +\infty} \sin \left(\frac{1}{x} \right)$$

$$\lim_{x \rightarrow 0^+} \left(\sqrt{x} \sin \left(\frac{1}{\sqrt{x}} \right) \right).$$