ESERCIZI CAP. 3 - PARTE PRIMA

Calcolare i seguenti limiti

$$\lim_{x\to+\infty} \frac{2-x}{x^2+5} \qquad \lim_{x\to+\infty} \frac{2x^3+1}{(x-6)^3}$$

$$\lim_{x\to+\infty} \frac{x^2+3x+4}{x-1} \qquad \lim_{x\to+\infty} \frac{(x^2+2)^2}{1-3x}$$

$$\lim_{x\to+\infty} \frac{2x-x^3+3}{x^2-2} \qquad \lim_{x\to-\infty} \frac{x^3+4x+2}{x^2-1}$$

$$\lim_{x\to-\infty} \frac{x^3+4x+2}{2x+3} \qquad \lim_{x\to-\infty} \frac{x^3+4x^8+2}{x^2-1}$$

$$\lim_{x\to-\infty} \frac{x^3+4x^8+2}{2-x^5} \qquad \lim_{x\to-\infty} \frac{x-3x^3+4}{2x^2+1}$$

$$\lim_{x\to(-1)^-} 2^{\frac{3x+1}{x^2-1}} \qquad \lim_{x\to2^-} 3^{\frac{1-4x}{x^2-4}}$$

$$\lim_{x\to3^+} \left(\frac{1}{4}\right)^{\frac{x+1}{x^2-9}} \qquad \lim_{x\to(-4)^+} \left(\frac{1}{\pi}\right)^{\frac{x-2}{x^2-16}}$$

$$\lim_{x\to+\infty} \log_2 \frac{x+1}{x^2-4} \qquad \lim_{x\to(-1)^-} \log_{\frac{1}{3}} \frac{x+1}{x^2-4}$$

$$\lim_{x\to1^+} \log \frac{3-x}{x^2-1} \qquad \lim_{x\to2^-} \log_{\frac{1}{e}} \frac{x-2}{x^2-9}$$

$$\lim_{x\to-\infty} \operatorname{arctg} \frac{|x|-1}{x+3} \qquad \lim_{x\to+\infty} \operatorname{arctg} \frac{x^2-1}{x+2}$$

$$\lim_{x\to+\infty} \frac{e^{\frac{2x-1}{x^4+2}}-1}{\frac{3x^2}{x^5+1}}$$

$$\lim_{x\to+\infty} (x+2)^3\left(e^{\frac{6x^5-2}{x^8+1}}-1\right)$$

$$\lim_{x\to+\infty} \frac{\sqrt[4]{\frac{x^2+x+2}{(x+1)^2}}-1}{\operatorname{tg}\frac{2x}{x^2+3}}$$

$$\lim_{x\to+\infty} \frac{\sqrt[3]{\frac{x^2+3}{x^2+2}}-1}{1-\cos\frac{2}{x+4}}$$

Scrivere le equazioni degli asintoti delle seguenti funzioni

$f(x)=\frac{x^2-2}{x^4+3}$ $\qquad$ $f(x)=\frac{x^2-2}{x^4-16}$ $\qquad$ $f(x)=\frac{x^2-2}{x^2-9}$

$f(x)=\frac{x^2-2}{x^2+9}$ $\qquad$ $f(x)=\frac{x^3-x+1}{x^2-4}$ $\qquad$ $f(x)=\frac{x^3-x+1}{x^2+4}$

$f(x)=\frac{x^4-x+1}{x^2-9}$ $\qquad$ $f(x)=\frac{x^4-x+1}{x^2+9}$ $\qquad$ $f(x)=\frac{x^4-x+1}{x+6}$

$f(x)=\sqrt{x^2-2x}$ $\qquad$ $f(x)=\sqrt{x^2+3x+1}$ $\qquad$ $f(x)=\sqrt{x^2+4x}$