

(E)

$$39) \lim_{x \rightarrow +\infty} \frac{3x^3 + 2x + 1}{x^2 + 1} = \left(\frac{+\infty}{\infty} \right) = +\infty$$

$$40) \lim_{x \rightarrow 2} \frac{x^2 - 2x}{x^2 + x - 6} = \left(\frac{0}{0} \right) = \lim_{x \rightarrow 2} \frac{x(x-2)}{(x+3)(x-2)} = \frac{2}{5}$$

$$41) \lim_{x \rightarrow 0} 3 + e^x + e^{2x} = 3 + e^0 + e^0 = 5$$

$$42) \lim_{x \rightarrow +\infty} \left(\frac{2}{5} \right)^x = 0 \quad (a^x \text{ con } 0 < a < 1 \rightarrow a^{+\infty} \rightarrow 0)$$

$$43) \lim_{x \rightarrow +\infty} \frac{6x^2 - x + 1}{2x^2 + x + 1} = \left(\text{stesso grado } \frac{\infty}{\infty} \right) = 3$$

$$44) \lim_{x \rightarrow -\infty} \left(\frac{2}{5} \right)^x = \left(\frac{2}{5} \right)^{-\infty} = \left(\frac{5}{2} \right)^{+\infty} = +\infty \quad (a^x \text{ con } a > 1)$$

$$45) \lim_{x \rightarrow +\infty} \left(\frac{2x}{x+1} - \frac{1}{x} \right) = 2 - 0 = 2$$

$$46) \lim_{x \rightarrow 0} \frac{\sin x}{3x} = \lim_{x \rightarrow 0} \frac{1}{3} \cdot \left(\frac{\sin x}{x} \right) = \frac{1}{3}$$

$$47) \lim_{x \rightarrow +\infty} \frac{e^x}{3x} = \left(\frac{\infty}{\infty} \right) = +\infty$$

$$48) \lim_{x \rightarrow 0^+} \frac{x+4}{\ln x} = \frac{4}{\ln 0^+} = \frac{4}{-\infty} = 0$$

$$49) \lim_{x \rightarrow +\infty} e^{\frac{1-x^2}{x}} = e^{-\infty} = 0$$

$$50) \lim_{x \rightarrow -\infty} \frac{\sqrt{4x^2 + 1}}{x+1} = \left(\frac{\infty}{\infty} \right) = \lim_{x \rightarrow -\infty} \frac{|x| \sqrt{4 + 1/x^2}}{x+1} =$$

$$\lim_{x \rightarrow -\infty} \frac{-x \sqrt{4}}{x+1} = \frac{-2x}{x+1} = -2.$$