

# CORRECTION

## EXERCICE n°30 :

a. On a :

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

b. On a :

$$\left. \begin{array}{l} \lim_{x \rightarrow +\infty} \left( \frac{2x^3 - 1}{e^x} \right) = \lim_{x \rightarrow +\infty} \left( \frac{2x^3}{e^x} \right) = \lim_{x \rightarrow +\infty} \left( \frac{1}{\frac{e^x}{2x^3}} \right) \\ \lim_{x \rightarrow +\infty} \left( \frac{e^x}{x^3} \right) = +\infty \end{array} \right\} \Rightarrow \lim_{x \rightarrow +\infty} \left( \frac{2x^3 - 1}{e^x} \right) = 0.$$

c. On a :

$$\lim_{x \rightarrow -\infty} \left[ e^x (x^4 - 2x + 1) \right] = \lim_{x \rightarrow -\infty} (x^4 e^x) = 0.$$

d. On a :

$$\lim_{x \rightarrow +\infty} (2x + 1 - 3e^x) = \lim_{x \rightarrow +\infty} (-3e^x) = -\infty.$$