19 **R** $f(x) = -\dfrac{4}{3} x^4 - 3x^2 + \dfrac{1}{3}$.

20 $f(x) = 6x^3 - 4x$.

21 $f(x) = \dfrac{2x + 3}{x^2 + 1}$.

22 **C** $f(x) = \dfrac{x^3 + 1}{x^2 + x + 1}$.

23 $f(x) = \dfrac{2x^2 - 1}{4x^2 + 5}$.

▶ *Pour chacun des exercices 24 à 36*, *déterminer les limites demandées.*
On utilisera les résultats donnés dans la fiche l'Essentiel page 233.

24 **C** $\displaystyle\lim_{x \to +\infty}\left(x^2 + \dfrac{2}{x}\right)$; $\displaystyle\lim_{x \to +\infty}(2x + \ln x)$.

25 $\displaystyle\lim_{x \to +\infty}(2x + e^x)$; $\displaystyle\lim_{\substack{x \to 0 \\ x > 0}}\dfrac{e^x}{x}$.

26 **R** $\displaystyle\lim_{x \to +\infty}\dfrac{1}{e^x + 1}$; $\displaystyle\lim_{x \to +\infty}3e^{-2x}$.

27 $\displaystyle\lim_{x \to 1}x^2 e^x$; $\displaystyle\lim_{x \to 1}2x^3 \ln x$.

28 **C** $\displaystyle\lim_{x \to +\infty}\ln(x - 2)$; $\displaystyle\lim_{\substack{x \to 2 \\ x > 2}}\ln(x - 2)$.

29 $\displaystyle\lim_{x \to +\infty}2e^{x+1}$; $\displaystyle\lim_{x \to -\infty}e^{1-x}$.

30 $\displaystyle\lim_{x \to +\infty}x^2 \ln x$; $\displaystyle\lim_{x \to -\infty}(x + 1)e^{-x}$.

31 $\displaystyle\lim_{x \to 0}(e^x + e^{-x})$; $\displaystyle\lim_{x \to -\infty}e^{\frac{1}{x}}$.

32 **R** $\displaystyle\lim_{x \to +\infty}\left(2x + \dfrac{\ln x}{x}\right)$; $\displaystyle\lim_{x \to +\infty}\left(1 + \dfrac{e^x}{x^2}\right)$.