

Ex

$$\textcircled{1} \lim_{t \rightarrow \infty} \frac{t - \sqrt{t^3}}{2t^{3/2} + 3t - 5} \cdot \frac{1}{t^{3/2}} = \lim_{t \rightarrow \infty} \frac{\frac{1}{t^{1/2}} - 1}{2 + \frac{3}{t^{1/2}} - \frac{5}{t^{3/2}}}$$

$$= \frac{0 - 1}{2 + 0 - 0} = -\frac{1}{2}$$

$$\left[\begin{array}{l} \lim_{x \rightarrow \infty} \frac{1}{x^r} = 0 \\ \lim_{x \rightarrow -\infty} \frac{1}{x^r} = 0 \end{array} \right]$$

$$\textcircled{2} \lim_{x \rightarrow -\infty} \frac{2x^2 + 1}{3x^3 - x + 4} \cdot \frac{1}{x^3} = \lim_{x \rightarrow \infty} \frac{\frac{2}{x} + \frac{1}{x^3}}{1 - \frac{1}{x^2} + \frac{4}{x^3}}$$
$$= \frac{0 + 0}{1 - 0 + 0} = 0$$

$$\textcircled{3} \lim_{x \rightarrow \infty} \frac{x^2}{\sqrt{x^4 + 1}} = \lim_{x \rightarrow \infty} \frac{x^2}{(x^4 + 1)^{1/2}} \cdot \frac{1}{1}$$

$4 \cdot \frac{1}{2}$

