Limits at $\pm\infty$

Examples:

$\displaystyle\lim_{x\to\infty}\frac{5x^{\frac{3}{2}}}{4x^2+1} \sim \lim_{x\to\infty}\frac{5x^{\frac{3}{2}}}{4x^2}$ $\displaystyle = \lim_{x\to\infty}\frac{5}{4x^{\frac{1}{2}}}$ $= 0$	$\displaystyle\lim_{x\to-\infty}\frac{3x^3-1}{3-2x} \sim \lim_{x\to-\infty}\frac{3x^3}{-2x}$ $\displaystyle = \lim_{x\to-\infty}-\frac{3x^2}{2}$ $\to -\infty$	$\displaystyle\lim_{x\to-\infty}\frac{-3x+1}{\sqrt{x^2+x}} \sim \lim_{x\to-\infty}\frac{-3x}{\sqrt{x^2}}$ $\displaystyle = \lim_{x\to-\infty}\frac{-3x}{|x|}$ $\displaystyle = \lim_{x\to-\infty}\frac{-3x}{-x} \text{ since } |x| = \begin{cases} x & x\geq 0 \\ -x & x<0 \end{cases}$ $\displaystyle = \lim_{x\to-\infty}(3)$ $= -3$