4. $\lim_{x \to -\infty} \left(\frac{7}{x} - \frac{x}{4} \right)$

$= \lim_{x \to -\infty} \left(\frac{7 \cdot 4}{4x} - \frac{x \cdot x}{4x} \right)$

$= \lim_{x \to -\infty} \left(\frac{28}{4x} - \frac{x^2}{4x} \right)$

$= \lim_{x \to -\infty} \left(\frac{28 - x^2}{4x} \right)$

$= \lim_{x \to -\infty} \left(\frac{\frac{28}{x} - \frac{x^2}{x}}{\frac{4x}{x}} \right)$

$= \lim_{x \to -\infty} \left(\frac{\frac{28}{x} - x}{4} \right)$

$= \frac{\frac{28}{-\infty} - (-\infty)}{4}$

$= \frac{\infty}{4}$

$= \infty$

NOTE: $\frac{1}{\infty}$

$\frac{1}{1} \quad \frac{1}{2} \quad \frac{1}{10} \quad \frac{1}{1m} \quad \frac{1}{1000000}$

$= 1 \quad = \frac{1}{2} \quad = \frac{1}{10} \quad = \frac{1}{1m} \rightarrow$ ZERO

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5. $\lim_{x \to \infty} \left(\frac{x^2 + 5}{3x^2 - 7} \right)$

$= \lim_{x \to \infty} \left(\frac{\frac{x^2}{x^2} + \frac{5}{x^2}}{\frac{3x^2}{x^2} - \frac{7}{x^2}} \right)$

$= \lim_{x \to \infty} \frac{1 + \frac{5}{x^2}}{3 - \frac{7}{x^2}}$

$= \frac{1 + \frac{5}{\infty^2}}{3 - \frac{7}{\infty^2}}$

$= \frac{1 + 0}{3 - 0}$

$= \frac{1}{3}$