e) $\lim_{x\to\infty}\left(-2x^3+1-\frac{5}{x}+\frac{12}{x^4}\right)$

Solution: This limit is $-\infty$ since the first term approaches negative infinity, the second term approaches 1 and the other two terms aproach zero as x approaches infinity. Using mathematical notation,

$$\lim_{x\to\infty}\left(-2x^3+1-\frac{5}{x}+\frac{12}{x^4}\right)=\lim_{x\to\infty}(-2x^3)+\lim_{x\to\infty}1+\lim_{x\to\infty}\left(-\frac{5}{x}\right)+\lim_{x\to\infty}\left(\frac{12}{x^4}\right)=-\infty+1+0+0=-\infty$$