

Question 4

Evaluate the limit:

$$\lim_{x \rightarrow -\infty} \frac{6x^3 + 4x - 1}{-2x^3 + 7x^2 + 5}$$

Question 4 - Solution

We are given:

$$\lim_{x \rightarrow -\infty} \frac{6x^3 + 4x - 1}{-2x^3 + 7x^2 + 5}$$

We divide both the numerator and denominator by x^3 , the highest power of x :

$$= \lim_{x \rightarrow -\infty} \frac{6 + \frac{4}{x^2} - \frac{1}{x^3}}{-2 + \frac{7}{x} + \frac{5}{x^3}}$$

As $x \rightarrow -\infty$, all terms with negative exponents approach zero:

$$= \frac{6}{-2} = -3$$

Final Answer:

$$\boxed{-3}$$