

Answer on Question #53835 – Math – Calculus

Find the limit of the function algebraically.

Limit as x approaches zero of quantity negative six plus x divided by x to the fourth power.

Solution

$$\lim_{x \rightarrow 0} \frac{-6 + x}{x^4}$$

By plugging in $x=0$, you get 0 in the denominator. By plugging in $x=0$, you get (-6) in the numerator. This means that the limit is either positive or negative infinity. If the numerator is positive, then the limit is $\lim = +$ infinity (positive infinity). If the numerator is negative, then

$\lim = -$ infinity (negative infinity).

Therefore our numerator $-6 + 0 = -6 < 0$ is negative.

As a result,

$$\lim_{x \rightarrow 0} \frac{-6 + x}{x^4} = -\infty$$

Answer: $\lim_{x \rightarrow 0} \frac{-6+x}{x^4} = -\infty.$