

Question 8

Evaluate the limit:

$$\lim_{x \rightarrow 2^+} \frac{1}{x - 2}$$

Question 8 - Solution

We are given the limit:

$$\lim_{x \rightarrow 2^+} \frac{1}{x-2}$$

Step 1: Analyze the expression near $x = 2^+$

As x approaches 2 from the right, the value of $x - 2$ becomes a very small positive number. Therefore, $\frac{1}{x-2}$ becomes a very large positive number.

$$x \rightarrow 2^+ \quad \Rightarrow \quad x - 2 \rightarrow 0^+ \quad \Rightarrow \quad \frac{1}{x-2} \rightarrow +\infty$$

Conclusion:

$$\boxed{\lim_{x \rightarrow 2^+} \frac{1}{x-2} = +\infty}$$

This indicates that the function grows without bound as x approaches 2 from the right.