

Two Sided Limit

Question: Find the limits.

6. $\lim_{x \rightarrow 0} \frac{6x - 9}{x^3 - 12x + 3}$

Answer:

this limit is $(6 \cdot 0 - 9)/(0^3 - 12 \cdot 0 + 3) = -3$.

Question: Find the limits.

10. $\lim_{x \rightarrow 2} \frac{x^2 - 4x + 4}{x^2 + x - 6}$

Answer:

After simplification, $\frac{x^2 - 4x + 4}{x^2 + x - 6} = \frac{x - 2}{x + 3}$, and the limit is $(2 - 2)/(2 + 3) = 0$.

Question: Find the limits.

13. $\lim_{t \rightarrow 2} \frac{t^3 + 3t^2 - 12t + 4}{t^3 - 4t}$

Answer:

After simplification, $\frac{t^3 + 3t^2 - 12t + 4}{t^3 - 4t} = \frac{t^2 + 5t - 2}{t^2 + 2t}$, and the limit is $(2^2 + 5 \cdot 2 - 2)/(2^2 + 2 \cdot 2) = 3/2$.

Question: Find the limits.

29. $\lim_{x \rightarrow 9} \frac{x - 9}{\sqrt{x} - 3}$

Answer:

After simplification, $\frac{x - 9}{\sqrt{x} - 3} = \sqrt{x} + 3$, and the limit is $\sqrt{9} + 3 = 6$.