

Limit Example

Let $f(x) = \frac{x^3 - 5x^2 - x + 5}{x-1}$ for $x \neq 1$.

	x approaches 4 from the left →					← x approaches 4 from the right			
x	3.75	3.9	3.99	3.999	4	4.001	4.01	4.1	4.25
f(x)	-5.938	-5.390	-5.040	-5.004	?	-4.996	-4.960	-4.590	-3.938
	f(x) approaches -5 →					← f(x) approaches -5			

$$\lim_{x \rightarrow 4} f(x) = -5$$

	x approaches 1 from the left →					← x approaches 1 from the right			
x	0.75	0.9	0.99	0.999	1	1.001	1.01	1.1	1.25
f(x)	-7.438	-7.790	-7.980	-7.998	?	-8.002	-8.020	-8.190	-8.438
	f(x) approaches -8 →					← f(x) approaches -8			

$$\lim_{x \rightarrow 1} f(x) = -8$$

x	f(x)
-1	0
0	-5
1	undef.
2	-9
3	-8
4	-5
5	0

