$$f(x) = \begin{cases} -x + 2, & x < -1 \\ 2x + 1, & -1 \le x \le 1 \\ 2x^2, & x > 1 \end{cases}$$

Don't need This
$x \to 1^-$
$x \to 1^+$

① $\lim_{x \to 1^-} f(x)$ $\lim_{x \to 1^+} f(x)$ $\lim_{x \to 1} f(x)$

$x \to 1^-$

② $f(x) = 2 + 1$

x	f(x)
0.9	2.8
0.99	2.98
0.999	2.998
0.9999	2.9998

$\lim_{x \to 1^-} f(x) = 3$

$x \to 1^+$

$f(x) = 2x^2$

x	f(x)
1.1	2.42
1.01	2.0402
1.001	2.004002
1.0001	2.00040002

$\lim_{x \to 1^+} f(x) = 2$

③ $\lim_{x \to 1^-} f(x) = 3 \neq \lim_{x \to 1^+} f(x) = 2$

$\lim_{x \to 1} f(x)$ do not exist