Quiz Notes

*the starred topics you need to make charts for *

PC

* limit as x approaches a number

- even is the value of x does not exist the limit still can

ex $\lim_{x\to 1} \frac{x^2-1}{x-1} = 2$

① graph
② make a chart :

0.9	0.99	0.999	1	1.001	1.01	1.1
1.9	1.99	1.999	dne	2.001	2.01	2.1

2 2

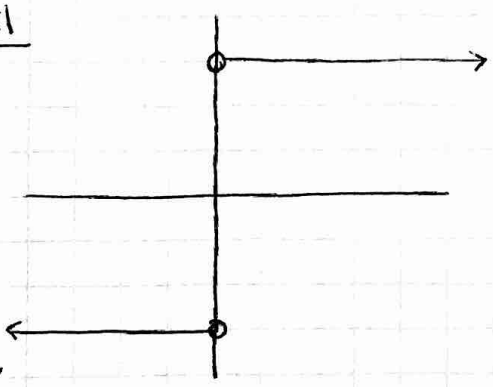
③ menu → graph trace to fill in the chart
④ are both arrows heading to the same #? If yes, that's the limit

two sided limits

$\lim_{x\to c^-} f(x)$ is approaches from the left & $\lim_{x\to c^+} f(x)$ is approaches from the right

- the left & right limit must be the same for the $\lim_{x\to c} f(x)$ to exist

ex $f(x) = \frac{|3x|}{x}$



$\lim_{x\to 0^-} f(x) = -3$

$\lim_{x\to 0^+} f(x) = 3$

$-3 \neq 3$

so $\lim_{x\to 0} f(x)$ dne

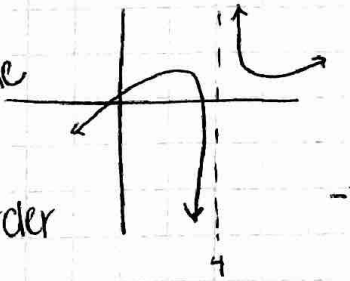
*infinite limits

- in the chart use 10, 100, 1000 for $x \to \infty$ & $-10, -100, -1000$ for $x \to -\infty$
- see where the chart is heading towards

* unbounded

$\lim_{x\to 4} \frac{x^2-8}{x-4}$ dne

- both sides need to be equal in order for the limit to exist



① graph
② chart

3.9	3.99	3.999	4	4.001	4.01	4.1
-72.1	-792	-7992	dne	8008	808	88.1

$-\infty$ ∞

getting more negative quickly

$-\infty \neq \infty$