

Graphing Piecewise Functions

$$\text{ex: } f(x) = \begin{cases} 3-x & x \leq 1 \\ 2x & x > 1 \end{cases}$$

Evaluating Limits Numerically

 * Use table of values to find the limits

$$\text{ex: } \lim_{x \rightarrow 2} \frac{x-2}{x^2-4}$$

x	1.9	1.99	1.999	2	2.001	2.01	2.1
f(x)	.256	.251	.250		.250	.249	.244

$\xrightarrow{\quad \quad \quad} \lim_{x \rightarrow 2^-} f(x)$ $\xleftarrow{\quad \quad \quad} \lim_{x \rightarrow 2^+} f(x)$

$$\lim_{x \rightarrow 2} \frac{x-2}{x^2-4} = .25 \text{ or } \frac{1}{4}$$