

## 1.2 - 1.3 Limits

3 Ways:

- Numerically (table)
- Graphically
- Algebraically
  - Direct Substitution
  - Factor
  - Rationalize numerator or denominator

1) Numerically:

$$a) \lim_{x \rightarrow 2} \frac{x-2}{x^2-x-2}$$

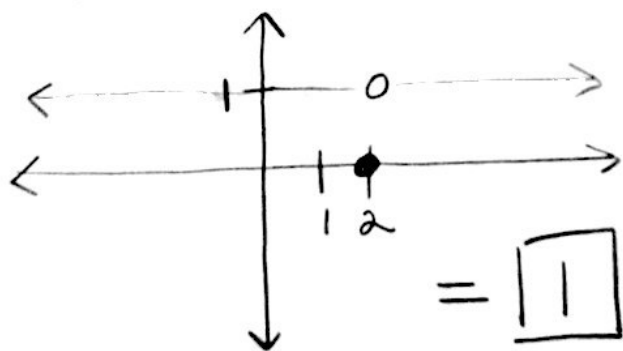
Table  $\rightarrow$  Tblset  $\rightarrow$  ASK

1.9	.34483
1.999	.33344
2	Error
2.001	.33322
2.1	.32258

$> .3333 \rightarrow \boxed{\frac{1}{3}}$

2) Graphically:

$$a) \lim_{x \rightarrow 2} f(x) = \begin{cases} 1, & x \neq 2 \\ 0, & x = 2 \end{cases}$$



$$b) \lim_{x \rightarrow 0} \frac{|x|}{x}$$

$\lim_{x \rightarrow 0^+} \frac{|x|}{x} = 1$        $\lim_{x \rightarrow 0^-} \frac{|x|}{x} = -1$

$\boxed{\text{DNE}}$