

MR CARVER'S LIMIT TIP SHEET

ALWAYS START BY PLUGGING IN C!

IF $\lim_{x \rightarrow c} f(x) = \frac{0}{0}$ YOU ARE NOT DONE!

YOU WILL: * MULTIPLY BY THE CONJUGATE

* COMMON DENOMINATOR & COPY, DOT, FLOP

* SPLIT AND USE TRIG. IDENTITIES

* FACTOR AND CANCEL $\rightarrow \lim_{x \rightarrow 2} \frac{|x-2|}{x-2}$

* THINK OF A SPECIAL CASE

$$\text{IF } \lim_{x \rightarrow c} f(x) = \frac{0}{\text{A NON-ZERO \#}} = 0$$

ALWAYS!

$$\left[\lim_{x \rightarrow 3} \frac{x-3}{x^2+9} = \frac{0}{18} = 0 \right]$$

$$\text{IF } \lim_{x \rightarrow c} f(x) = \frac{\text{A NON-ZERO \#}}{0} = * \text{"DNE"} \text{ IF THE LIMIT IS TWO SIDED}$$

* EITHER ∞ OR $-\infty$ IF THE LIMIT IS ONE SIDED

$$\text{IF } \lim_{x \rightarrow c} f(x) = \frac{\text{A NON-ZERO \#}}{\text{A NON-ZERO \#}}$$

THE LIMIT WILL BE THAT FRACTION

$$\left[\lim_{x \rightarrow 2} \frac{x^2+2}{x^2-2} = \frac{6}{2} = 3 \right]$$

$\frac{\cancel{VVVS} + \#}{\cancel{VVVS} + \#} = \frac{0}{0}$ THIS NOT A SOLVING TECHNIQUE - DO NOT USE IT!!!