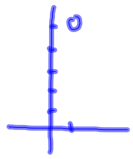
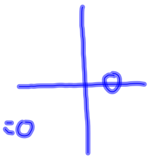
(13) $\lim_{x\to1} \frac{x^2-7x+6}{1-x} = \frac{1-7+6}{1-1} = \frac{0}{0}$ (Ind)

$\lim_{x\to1} \frac{\cancel{(x-1)}(x-6)}{\cancel{1-x}} = \lim_{x\to1} -(x-6) = 5$



$\lim_{x\to1} \frac{(x-1)^2}{1-x^2} = \frac{0}{0}$ (Ind)

$\lim_{x\to1} \frac{-(x-1)^{\cancel{2}}}{\cancel{(1-x)}(1+x)} = \lim_{x\to1} \frac{-(x-1)}{1+x} = \frac{0}{2} = 0$



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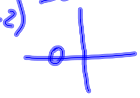
c) $\lim_{x\to-1} \frac{x^3+4x^2+5x+2}{x^2-x-2} = \frac{-1+4-5+2}{1+1-2} = \frac{0}{0}$ (Ind)

	1	4	5	2
-1		-1	-3	-2
	1	3	2	$\boxed{0}$

$x = \frac{-3\pm1}{2} < \begin{matrix}-1\\-2\end{matrix}$

$\lim_{x\to-1} \frac{(x+1)^{\cancel{2}}(x+2)}{\cancel{(x+1)}(x-2)} = 0$



d) $\lim_{h\to0} \frac{(x+h)^2-x^2}{h} = \frac{0}{0}$ (Ind)

$\lim_{h\to0} \frac{\cancel{x^2}+2xh+h^2-\cancel{x^2}}{h} = \lim_{h\to0} \frac{\cancel{h}(2x+h)}{\cancel{h}} = 2x$

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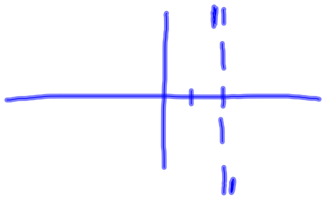
(14) $\lim_{x\to2} \left(\frac{3}{x^2-5x+6} - \frac{4}{x-2}\right) = \frac{3}{0} - \frac{4}{0} = \infty - \infty$

$(x-2)(x-3)$

$\lim_{x\to2} \frac{3-4(x-3)}{(x-2)(x-3)} = \lim_{x\to2} \frac{-4x+15}{(x-2)(x-3)} =$

$\frac{7}{0}$ (Ind) $\begin{cases} \lim_{x\to2^-} f(x) = \frac{7}{0^+} = +\infty \\ \lim_{x\to2^+} f(x) = \frac{7}{0} = -\infty \end{cases}$ $\nexists \lim$



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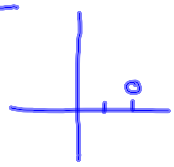
5) $\lim_{x\to2} \frac{1-\sqrt{3-x}}{x-2} = \frac{1-1}{2-2} = \frac{0}{0}$ (Ind)

$\lim_{x\to2} \frac{(1-\sqrt{3-x})(1+\sqrt{3-x})}{(x-2)(1+\sqrt{3-x})}$

$\lim_{x\to2} \frac{\cancel{1-3+x}}{\cancel{(x-2)}(1+\sqrt{3-x})} = \frac{1}{2}$



dic 7-13:48

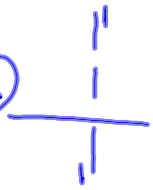
c) $\lim_{x\to 0}\frac{\sqrt{x+9}-3}{x^2}=\frac{0}{0}$ |Ind|

$\lim_{x\to 0}\frac{(\sqrt{x+9}-3)(\sqrt{x+9}+3)}{x^2(\sqrt{x+9}+3)}$

$\lim_{x\to 0}\frac{\cancel{x}+\cancel{9}-\cancel{9}}{x^2(\sqrt{x+9}+3)}\overset{\frac{0}{0}}{=}\lim_{x\to 0}\frac{1}{x(\sqrt{x+9}+3)}=\frac{1}{0}$

$\lim_{x\to 0^-} f(x)=\frac{1}{0^-}=-\infty$ ∄ lim

$\lim_{x\to 0^+} f(x)=\frac{1}{0^+}=+\infty$



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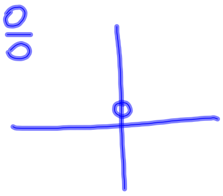
d) $\lim_{x\to 0}\frac{\sqrt{1+x}-\sqrt{1-x}}{3x}=\frac{0}{0}$ (Ind)

$\lim_{x\to 0}\frac{(\sqrt{1+x}-\sqrt{1-x})(\sqrt{1+x}+\sqrt{1-x})}{3x(\sqrt{1+x}+\sqrt{1-x})}$

$\lim_{x\to 0}\frac{\cancel{1}+x-\cancel{1}+x}{3x(\sqrt{1+x}+\sqrt{1-x})}$

$\lim_{x\to 0}\frac{2\cancel{x}}{3\cancel{x}(\sqrt{1+x}+\sqrt{1-x})}=\frac{0}{0}$

$\frac{2}{3(\sqrt{1}+\sqrt{1})}=\frac{1}{3}$



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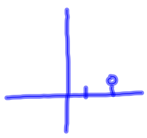
$1^{\pm\infty}$

M1: $\lim_{x\to a}\left(1+\frac{1}{f(x)}\right)^{f(x)}=e$

M2: $\lim_{x\to a} f(x)^{g(x)}=\boxed{e^{\lim_{x\to a} g(x)[f(x)-1]}}$

$\lim_{x\to 2}\left(\frac{x+2}{2x}\right)^{\frac{1}{2-x}}=\left(\frac{4}{4}\right)^{1/0}=1^{\pm\infty}$ (Ind)

$e^{\lim_{x\to 2}\frac{1}{2-x}\left(\frac{x+2}{2x}-1\right)}$

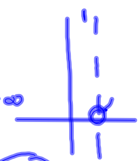


$e^{\lim_{x\to 2}\frac{1}{\cancel{2-x}}\frac{\cancel{x+2-2x}}{2x}}=e^{\lim_{x\to 2}\frac{1}{2x}}=e^{1/4}=\sqrt[4]{e}$

$\lim_{x\to 1}\left(\frac{2x+1}{x}\right)^{\frac{1}{1-x}}=3^{1/0}$

$\lim_{x\to 1^-} f(x)=3^{1/0^+}=3^{+\infty}=+\infty$

$\lim_{x\to 1^+} f(x)=3^{1/0^-}=3^{-\infty}=0$ ∄ lim



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