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$a)\quad \lim_{x\to 0}\frac{4x}{x^2-2x}=\left(\frac{0}{0}\right)=\lim_{x\to 0}\frac{4x}{(x)(x-2)}=\lim_{x\to 0}\frac{4}{(x-2)}=\frac{4}{-2}=-2$

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

$e)\quad \lim_{x\to -2}\frac{x+2}{x^2-4}=\left(\frac{0}{0}\right)=\lim_{x\to -2}\frac{x+2}{(x-2)(x+2)}=\lim_{x\to -2}\frac{1}{(x-2)}=\frac{1}{-4}=\frac{-1}{4}$

$g)\quad \lim_{x\to -3}\frac{x+3}{x^2+4x+3}=\left(\frac{0}{0}\right)=\lim_{x\to -3}\frac{x+3}{(x+3)(x+1)}=\lim_{x\to -3}\frac{1}{(x+1)}=\frac{1}{-2}=\frac{-1}{2}$

	1	4	3
−3		−3	−3
	1	1	0

$\rightarrow \quad x^2+4x+3=(x+3)(x+1)$

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15)

a) $\lim_{x\to 3}\dfrac{x^2-x-6}{x^2-3x}=\left(\dfrac{0}{0}\right)=\lim_{x\to 3}\dfrac{(x+2)(x-3)}{(x)(x-3)}=\lim_{x\to 3}\dfrac{x+2}{x}=\dfrac{5}{3}$

	1	−1	−6
3		3	6
	1	2	0

b) $\lim_{x\to 1}\dfrac{x^2-3x+2}{x^2-2x+1}=\left(\dfrac{0}{0}\right)=\lim_{x\to 1}\dfrac{(x-1)(x-2)}{(x-1)(x-1)}=\lim_{x\to 1}\dfrac{(x-2)}{x-1}=\dfrac{-1}{0}=\infty$

	1	−3	2
1		1	−2
	1	−2	0

	1	−2	1
1		1	−1
	1	−1	0

calculemos el signo del ∞

$\lim_{x\to 1^-}\dfrac{x-2}{x-1}=[x=0'9]\dfrac{-}{-}\infty=+\infty$

$\lim_{x\to 1^+}\dfrac{x-2}{x-1}=[x=1'1]\dfrac{-}{+}\infty=-\infty$