2.5.2

d) $\lim_{x \to 4} (-5) = -5$

$\downarrow$

$4 \in ED(f)$

$f(x) = -5$

c) $\lim_{x \to 0} \frac{x+3x^2}{x+1} = \frac{0+3\cdot 0^2}{0+1} = \frac{0}{1} = 0$

2.5.3

g) $\lim_{x\to 1} \frac{x^2-x}{x^3-4x^2-7x+10} = \text{"}\frac{0}{0}\text{"} = \lim_{x\to 1} \frac{x\cancel{(x-1)}}{\cancel{(x-1)}(x-5)(x+2)}$

Horner

	1	-4	-7	10
1		1	-3	-10
	1	-3	-10	0

$\Rightarrow (x-1)\underbrace{(x^2-3x-10)}_{(x-5)(x+2)}$

$= \frac{1}{-4\cdot 3} = -\frac{1}{12}$

h) $\lim\limits_{x\to 1} \dfrac{2x^3-3x^2+1}{x^2+3x-4} = \text{"}\dfrac{0}{0}\text{"} = \lim\limits_{x\to 1} \dfrac{\cancel{(x-1)}(2x^2-x-1)}{\cancel{(x-1)}(x+4)} = \dfrac{2-1-1}{5} = \dfrac{0}{5} = 0$

Horner

	2	-3	0	1
1		2	-1	-1
	2	-1	-1	0

$\Rightarrow (x-1)\underbrace{(2x^2-x-1)}_{\left((x-1)(2x+1)\right)}$