2.4.3 Effectuer et réduire :

i) $\dfrac{2y+1}{y^2+4y+4} - \dfrac{6y}{y^2-4} + \dfrac{3}{y-2} = \dfrac{2y+1}{(y+2)^2} - \dfrac{6y}{(y-2)(y+2)} + \dfrac{+3}{y-2}$

$y^2+4y+4 = (y+2)^2$

$y^2-4 = (y-2)(y+2)$

$y-2$

$\Big\} \quad (y+2)^2(y-2)$

$= \dfrac{(2y+1)(y-2) - 6y(y+2) + 3(y+2)^2}{(y+2)^2(y-2)}$

$= \dfrac{2y^2 - 3y - 2 - 6y^2 - 12y + 3y^2 + 12y + 12}{(y+2)^2(y-2)}$

$= \dfrac{-y^2 - 3y + 10}{(y+2)^2(y-2)} = \dfrac{-(y^2+3y-10)}{(y+2)^2(y-2)} = \dfrac{-(y+5)\cancel{(y-2)}}{(y+2)^2\cancel{(y-2)}}$

$= \dfrac{-(y+5)}{(y+2)^2}$

o) $\dfrac{2x^3+9x^2+7x-6}{2x^3+x^2-13x+6} = \dfrac{(x+2)(2x-1)(x+3)}{(x-2)(2x-1)(x+3)} = \dfrac{x+2}{x-2}$

$a = 2x^3+9x^2+7x-6$ $\qquad \frac{6}{2}$

- $a(1) \neq 0$
- $a(-1) = -2+9-7-6 \neq 0$
- $a(-2) = 0 \Rightarrow x+2 \mid a$

	2	9	7	6
-2		-4	-10	6
	2	5	-3	0

$\Rightarrow a = (x+2)(2x^2+5x-3)$

$= (x+2)(2x-1)(x+3)$

$b = 2x^3+x^2-13x+6$

- $b(2) = 0 \Rightarrow x-2 \mid b$

	2	1	-13	6
2		4	10	-6
	2	5	-3	0

$b = (x-2)(2x^2+5x-3)$

$= (x-2)(2x-1)(x+3)$