

Example: $f = 18x^3 - 42x^2 + 30x - 6$, $g = -12x^2 + 10x - 2$

i	q_i	p_i	r_i	s_i	t_i
0		18	$x^3 - \frac{7}{3}x^2 + \frac{5}{3}x - \frac{1}{3}$	$\frac{1}{18}$	0
1	$x - \frac{3}{2}$	-12	$x^2 - \frac{5}{6}x + \frac{1}{6}$	0	$-\frac{1}{12}$
2	$x - \frac{1}{2}$	$\frac{1}{4}$	$x - \frac{1}{3}$	$\frac{2}{9}$	$\frac{1}{3}x - \frac{1}{2}$
3		1	0	$-\frac{2}{9}x + \frac{1}{9}$	$-\frac{1}{3}x^2 + \frac{2}{3}x - \frac{1}{3}$

thus $\gcd(f, g) = x - \frac{1}{3} = \frac{2}{9}f + \left(\frac{1}{3}x - \frac{1}{2}\right)g$

Useful Maple commands (use `help()` for details)

`lcoeff;`

`quo;`

Also more advanced
with package Groebner

$\left\{ \begin{array}{l} \text{leadcoeff} \\ \text{leadterm} \\ \text{leadmon} \end{array} \right.$

In addition to help you check your answer

MAPLE has an implementation of the Extended Euclidean algorithm;

`gcdex(—) ←`