

MULTIPLICATION TABLE FOR TYPE G_2 .

β long, α short

x_1	x_2	$x_{\alpha+\beta}$	$x_{2\alpha+\beta}$	$x_{3\alpha+\beta}$	$x_{3\alpha+2\beta}$
x_α	x_β	$x_{\alpha+\beta}$	$x_{2\alpha+\beta}$	$x_{3\alpha+\beta}$	$x_{3\alpha+2\beta}$
x_α	$-x_{\alpha+\beta}$	$-2x_{2\alpha+\beta}$	$-3x_{3\alpha+\beta}$	0	0
x_β	$x_{\alpha+\beta}$	0	0	$-x_{3\alpha+2\beta}$	0
$x_{\alpha+\beta}$	$2x_{2\alpha+\beta}$	0	$3x_{3\alpha+2\beta}$	0	0
$x_{2\alpha+\beta}$	$3x_{3\alpha+\beta}$	0	$-3x_{3\alpha+2\beta}$	0	0
$x_{3\alpha+\beta}$	0	$x_{3\alpha+2\beta}$	0	0	0
$x_{3\alpha+2\beta}$	0	0	0	0	0
y_α	h_α	0	$-3x_\beta$	$-2x_{\alpha+\beta}$	$-x_{2\alpha+\beta}$
y_β	0	h_β	x_α	0	$-x_{3\alpha+\beta}$
$y_{\alpha+\beta}$	$-3y_\beta$	y_α	$h_\alpha+3h_\beta$	$2x_\beta$	0
$y_{2\alpha+\beta}$	$-2y_{\alpha+\beta}$	0	$2y_\alpha$	$2h_\alpha+3h_\beta$	x_α
$y_{3\alpha+\beta}$	$-y_{2\alpha+\beta}$	0	0	y_α	$h_\alpha+h_\beta$
$y_{3\alpha+2\beta}$	0	$-y_{3\alpha+\beta}$	$y_{2\alpha+\beta}$	$-y_{\alpha+\beta}$	y_β
h_α	$-2x_\alpha$	$3x_\beta$	$x_{\alpha+\beta}$	$-x_{2\alpha+\beta}$	$-3x_{3\alpha+\beta}$
h_β	x_α	$-2x_\beta$	$-x_{\alpha+\beta}$	0	$x_{3\alpha+\beta}$

y_1	y_2	y_3	y_4	y_5	y_6	h_1	h_2
y_α	y_β	$y_{\alpha+\beta}$	$y_{2\alpha+\beta}$	$y_{3\alpha+\beta}$	$y_{3\alpha+2\beta}$	h_α	h_β
$-h_\alpha$	0	$3y_\beta$	$2y_{\alpha+\beta}$	$y_{2\alpha+\beta}$	0	$2x_\alpha$	$-x_\alpha$
0	$-h_\beta$	$-y_\alpha$	0	0	$y_{3\alpha+\beta}$	$-3x_\beta$	$2x_\beta$
$3x_\beta$	$-x_\alpha$	$-h_\alpha-3h_\beta$	$-2y_\alpha$	0	$-y_{2\alpha+\beta}$	$-x_{\alpha+\beta}$	$x_{\alpha+\beta}$
$2x_{\alpha+\beta}$	0	$-2x_\beta$	$-2h_\alpha-3h_\beta$	$-y_\alpha$	$y_{\alpha+\beta}$	$x_{2\alpha+\beta}$	0
$x_{2\alpha+\beta}$	0	0	$-x_\alpha$	$-h_\alpha-h_\beta$	$-y_\beta$	$3x_{3\alpha+\beta}$	0
0	$x_{3\alpha+\beta}$	$-x_{2\alpha+\beta}$	$x_{\alpha+\beta}$	$-x_\beta$	$-h_\alpha-2h_\beta$	0	$x_{3\alpha+2\beta}$
0	$y_{\alpha+\beta}$	$2y_{2\alpha+\beta}$	$3y_{3\alpha+\beta}$	0	0	$-2y_\alpha$	y_α
$-y_{\alpha+\beta}$	0	0	0	$y_{3\alpha+2\beta}$	0	$3y_\beta$	$-2y_\beta$
$-2y_{2\alpha+\beta}$	0	0	$-3y_{3\alpha+2\beta}$	0	0	$y_{\alpha+\beta}$	$-y_{\alpha+\beta}$
$-3y_{3\alpha+\beta}$	0	$3y_{3\alpha+2\beta}$	0	0	0	$-y_{2\alpha+\beta}$	0
0	$-y_{3\alpha+2\beta}$	0	0	0	0	$-3y_{3\alpha+\beta}$	$y_{3\alpha+\beta}$
0	0	0	0	0	0	0	$-y_{3\alpha+2\beta}$
$2y_\alpha$	$-3y_\beta$	$-y_{\alpha+\beta}$	$y_{2\alpha+\beta}$	$3y_{3\alpha+\beta}$	0	0	0
$-y_\alpha$	$2y_\beta$	$y_{\alpha+\beta}$	0	$-y_{3\alpha+\beta}$	$y_{3\alpha+2\beta}$	0	0

