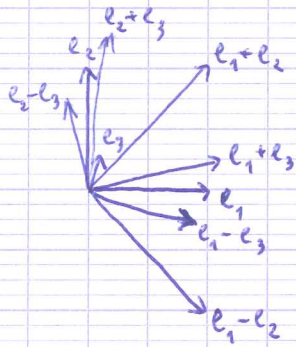
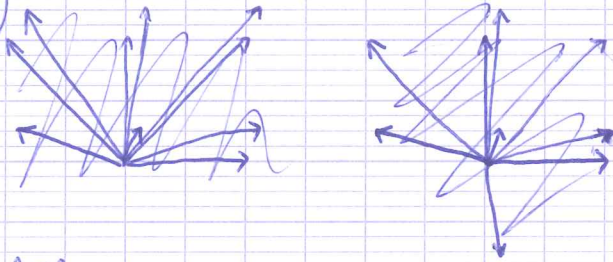


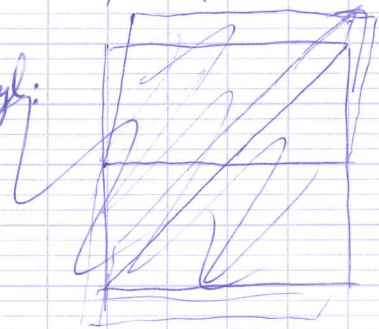
~~§ 0/5/21~~ B_3

Racines positives:

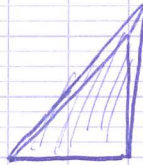
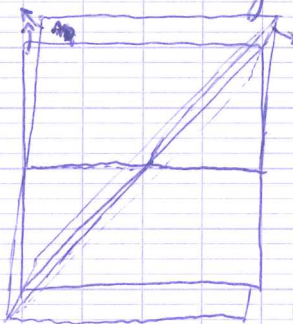


Racines simples: $e_1 - e_2, e_2 - e_3, e_3$

Chambre de Weyl:

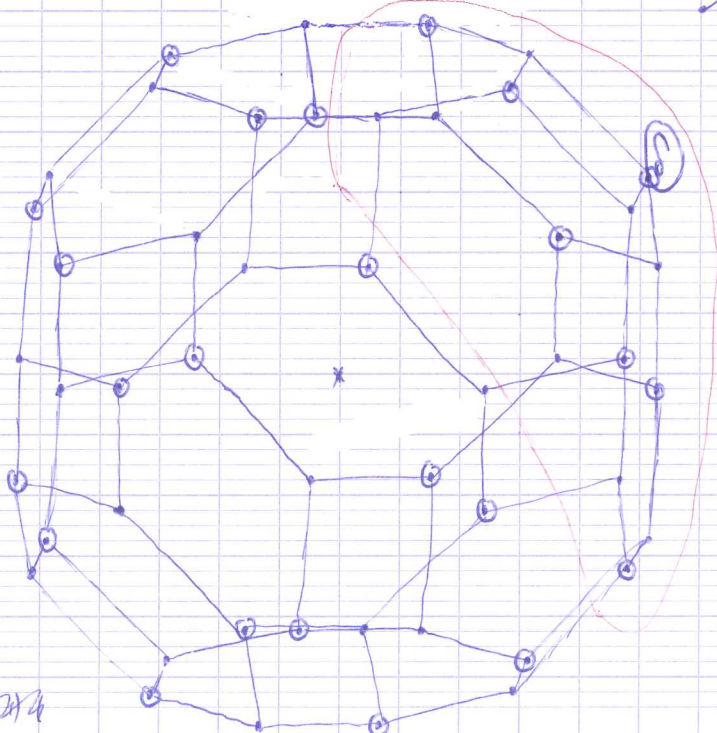


Chambre de Weyl:

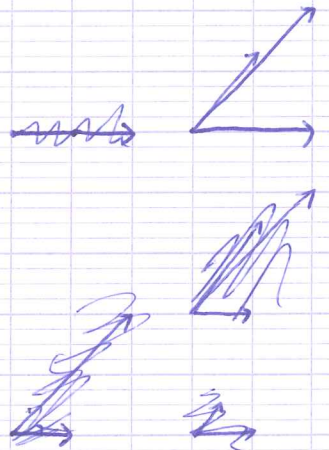


$$\delta = \frac{5}{2}e_1 + \frac{3}{2}e_2 + \frac{1}{2}e_3$$

Orbite de δ par W :



Poids fondamentaux:



$$\frac{2\langle \omega_j, \alpha_i \rangle}{\langle \alpha_i, \alpha_i \rangle} = \delta_{ij}$$

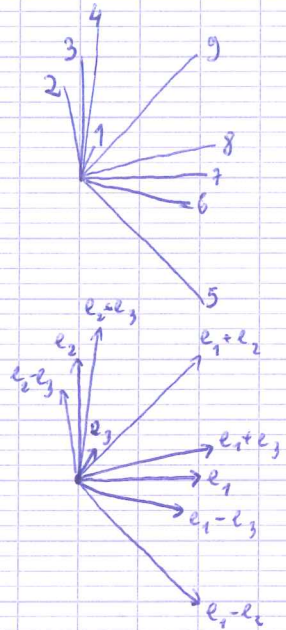
~~(0 0 1)~~
~~(0 1 -1)~~
~~(1 -1 0)~~

	(100)	(010)	$(\frac{1}{2}\frac{1}{2}\frac{1}{2})$
(001)	x	x	$\frac{1}{2}$
$(01-1)$	x	1	x
$(1-10)$	1	x	x

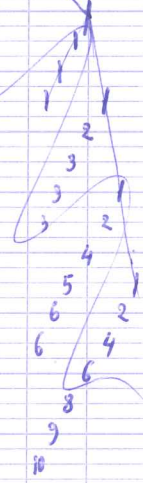
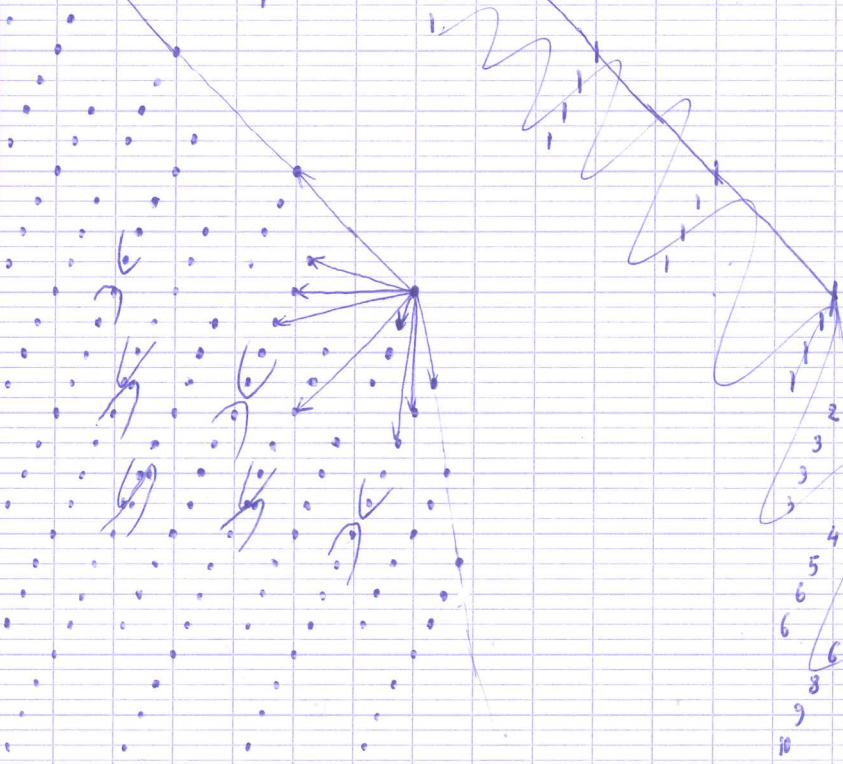
Poids contenus dans la chambre de Weyl.

Ordre:

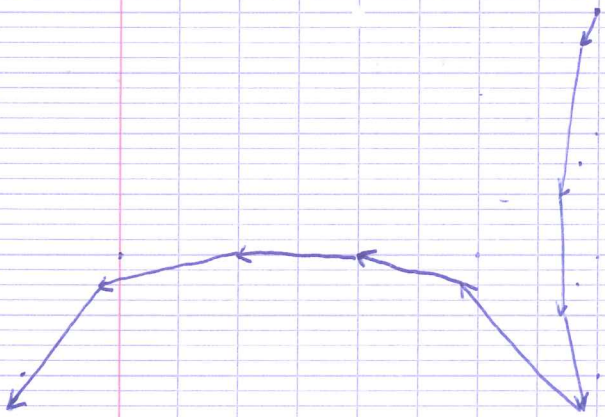
Taille des orbites

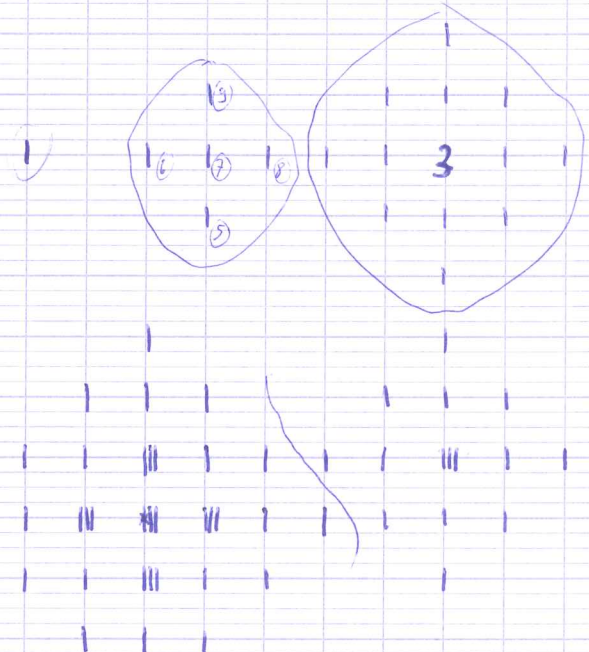
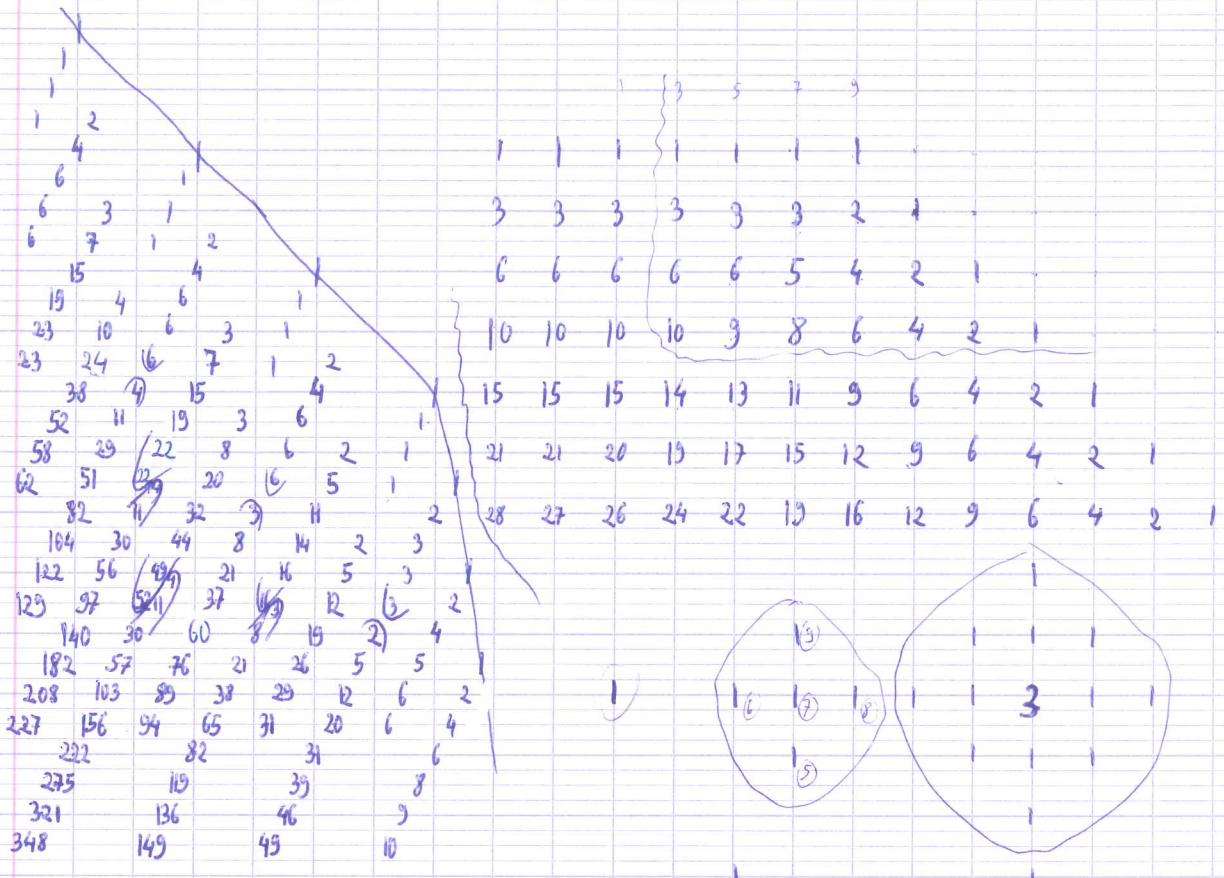
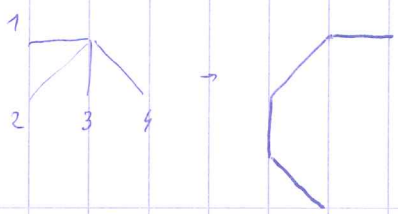


Fonction de partition de Kostant:



i			
2	1		
3	2	1	
4	3	2	1
4	3	2	
4	3	2	1
4	3	2	1





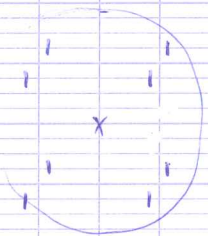
$S\mathfrak{O}(5, 2)$: dans une sous-alg. de Cartan maximalement non-compacte, les racines réelles sont e_2 , $e_1 + e_2$, e_1 et $e_1 + e_2$ positives

$S\mathfrak{O}(6, 1)$: dans une sous-alg. de Cartan maximalement non-compacte, les racines la seule rac. réelle positive est e_1 .

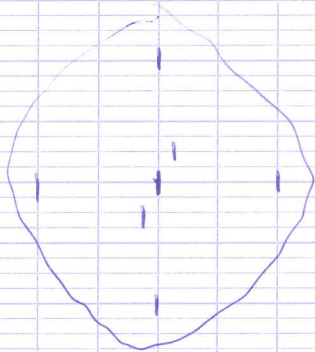
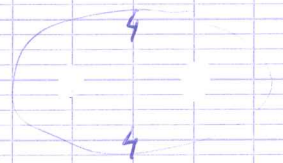
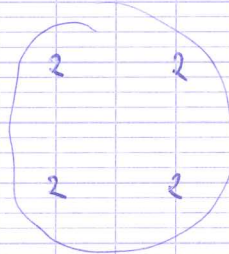
type
callbe

Représentations:

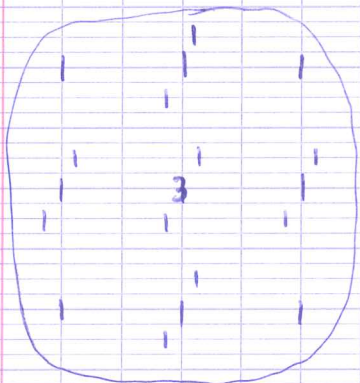
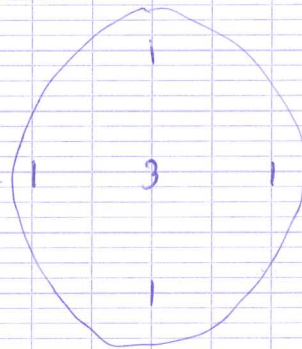
① Repr. triviale.



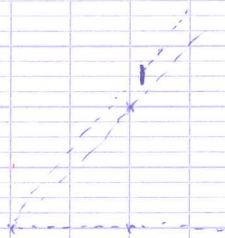
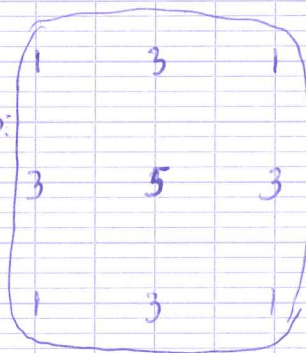
Repr. de spin. Projections:



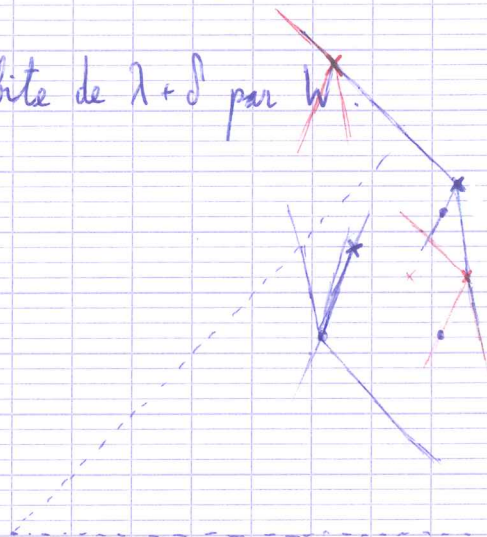
Repr. standard. Projections:

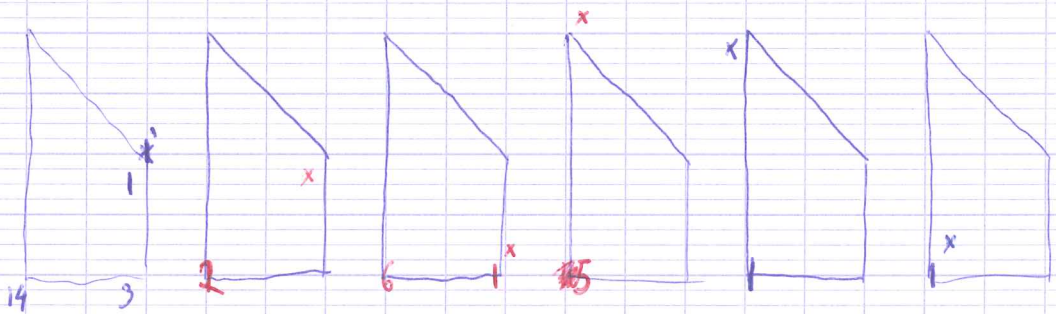
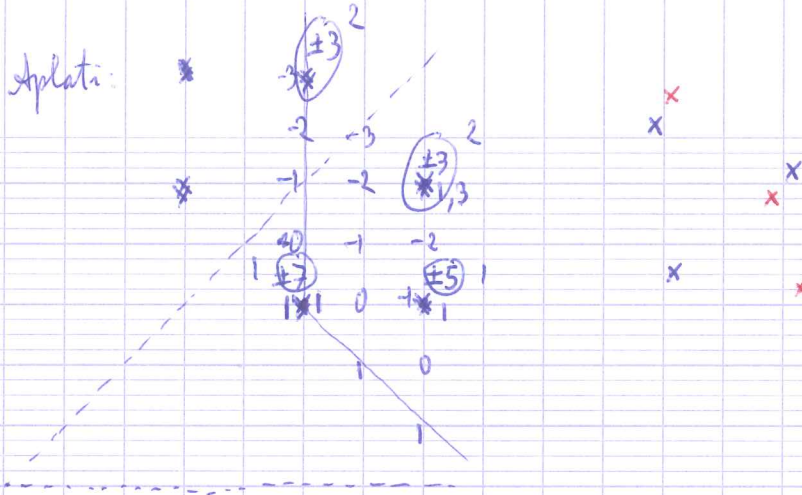


Projections:
Repr. adj.

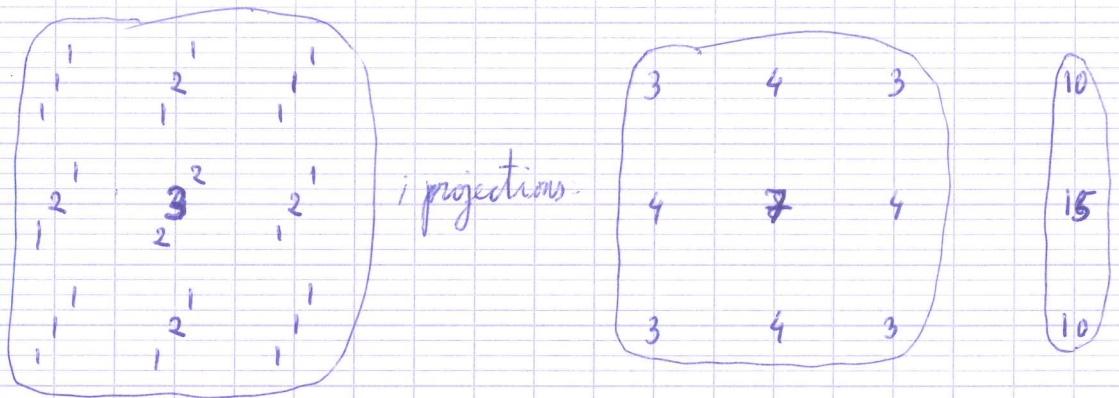


Orbite de $\lambda + \rho$ par W .





Total:
4
2



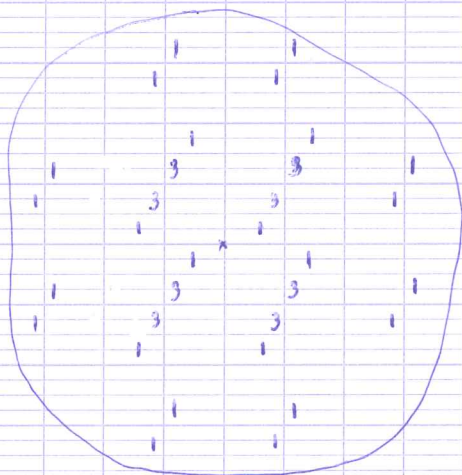
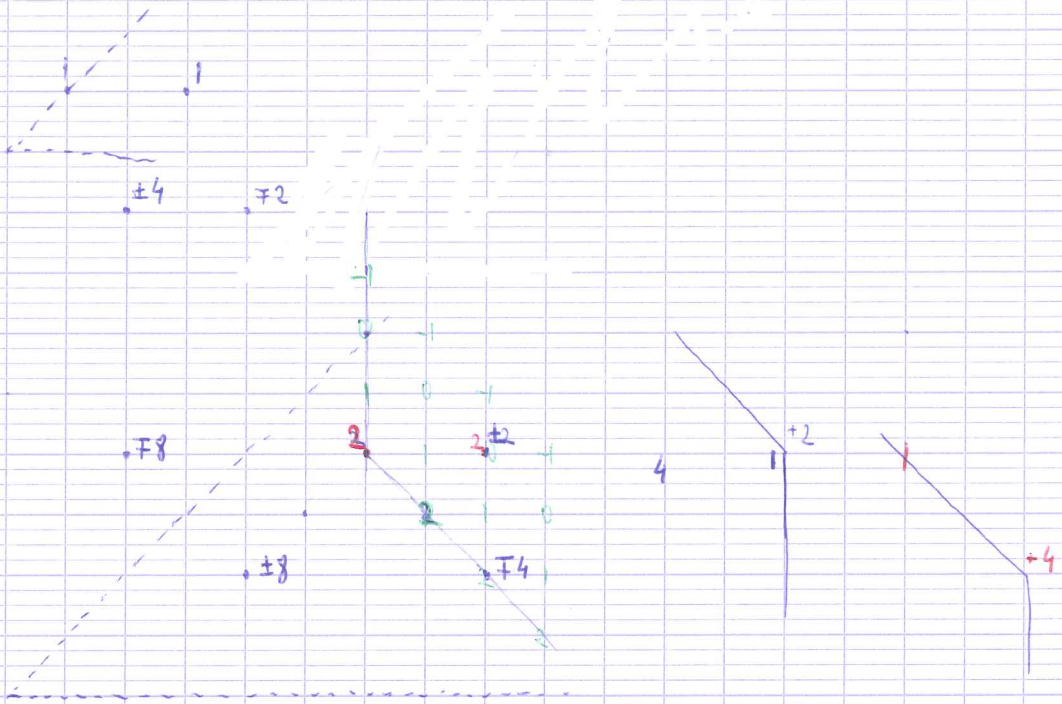
Dim totale: 35, vérification par la formule de dimension de Weyl:

$$\prod_{\alpha \in \Delta^+} \frac{1 - e^{-\langle \alpha, \lambda \rangle}}{1 - e^{-\langle \alpha, \mu \rangle}} = \frac{1 - e^{-\langle (7, 5, 3), \alpha \rangle}}{1 - e^{-\langle (5, 3, 1), \alpha \rangle}} = \frac{1 - e^{-\langle (7, 5, 3), \alpha \rangle}}{1 - e^{-\langle (5, 3, 1), \alpha \rangle}}$$

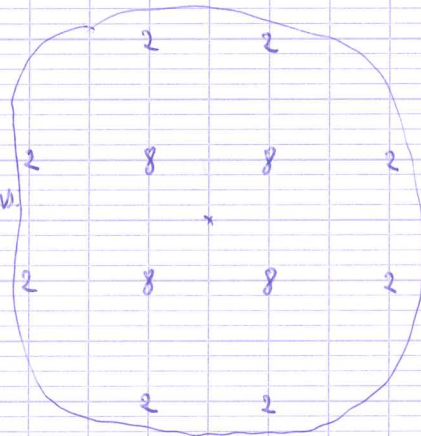
2

$\frac{7 \times 10 \times 3}{6} = 35$

- (0, 0, 2) (2, 2, 0) (0, 0, 1) (1, -1, 0)
- (0, 2, -2) (2, 0, -2) (0, 1, -1) (1, 0, -1)
- (0, 2, 0) (2, 0, 0) (0, 1, 0) (1, 0, 0)
- (0, 2, 2) (2, 0, 2) (0, 1, 1) (1, 0, 1)
- (2, 2, 0)



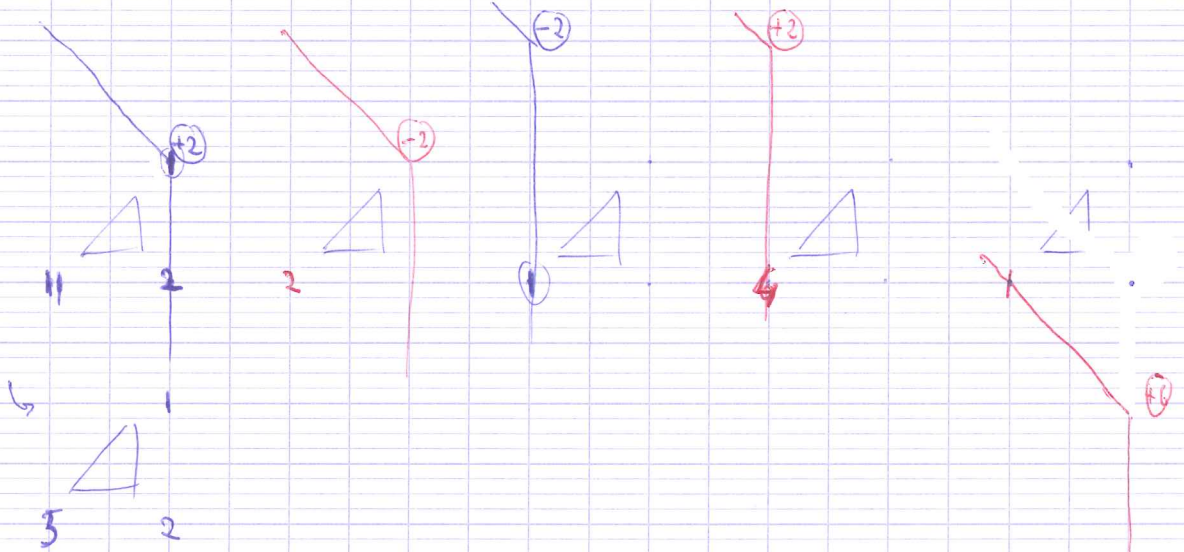
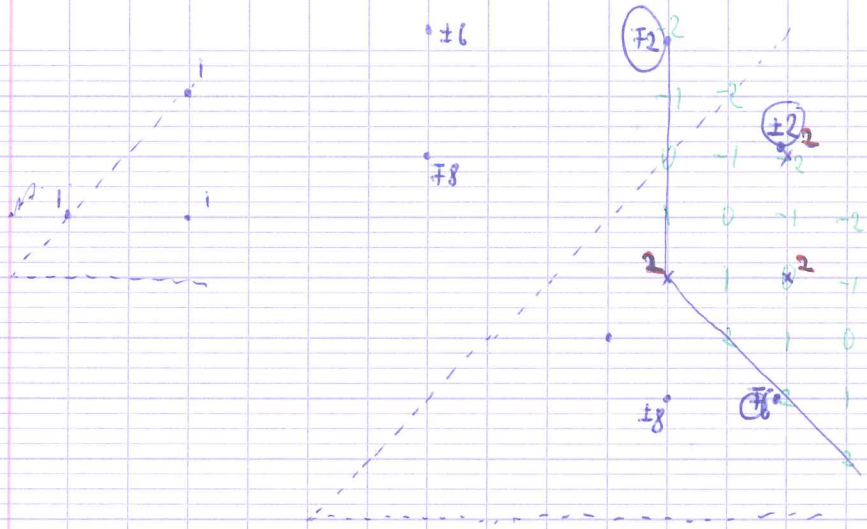
; projections



Dim. totale: 48; vérif. par la formule de Weyl:

$$\prod_{\alpha \in \Delta^+} \frac{1}{8} \langle (8, 4, 2), \alpha \rangle = \frac{2 \cdot 2 \cdot 4 \cdot 6 \cdot 4 \cdot 6 \cdot 8 \cdot 10 \cdot 8}{1 \cdot 2 \cdot 3 \cdot 4 \cdot 2 \cdot 4 \cdot 5 \cdot 6 \cdot 8} \quad \text{OK}$$

- (0, 0, 1) (0, 0, 0)
- (0, 1, -1) (1, 0, -1)
- (0, 1, 0) (1, 0, 0)
- (0, 1, 1) (1, 0, 1)
- (1, 1, 0) (1, 1, 0)



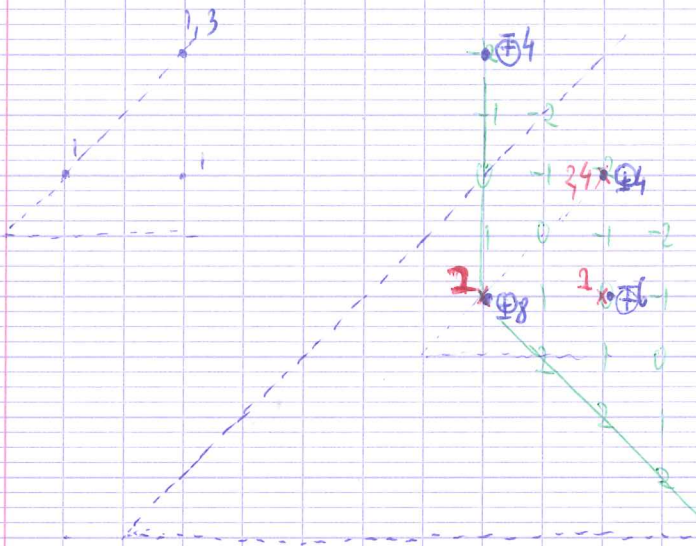
		1		1	
1		2		2	1
	1	2		2	
		1		1	
2	1	2		2	1
2		5		5	2
1	2	5		5	2
	1	2	x	2	1
	2	5		5	2
1	2	5		5	2
	1	2		2	1
2		5		5	2
1	2	5		5	2
	1	2		2	1
1		2		2	1
	1	2		2	1
1		1		1	

2	6	6	2
6	14	14	6
		x	
6	14	14	6
2	6	6	2

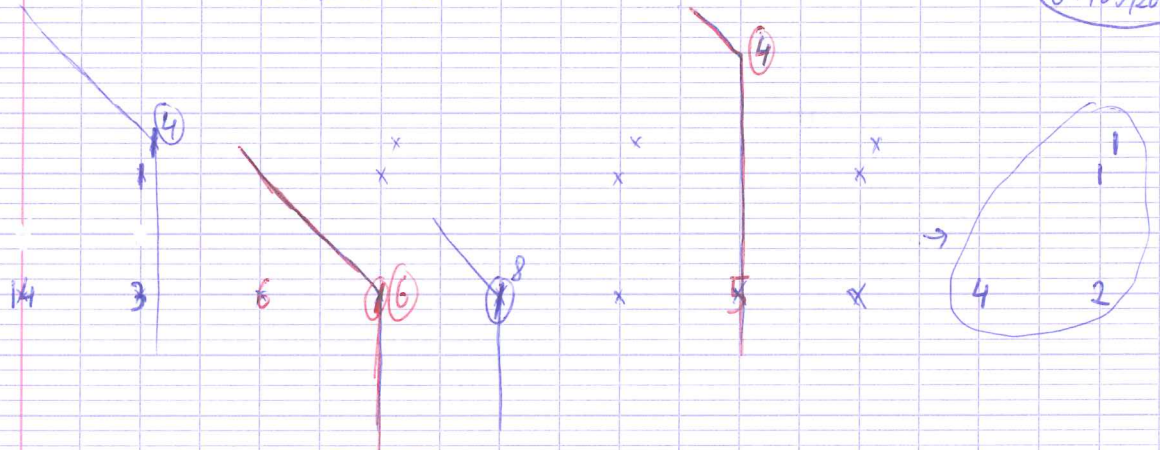
16
40
x
40
16

Dim. totale: $5 \times 8 + 2 \times 24 + 1 \times 24 = 5 \times 8 + 24 + 24 = 112$ (vérif. par la formule de Weyl).

$$\prod_{\alpha \in \Delta^+} \frac{1}{s} \langle (8, 6, 2), \alpha \rangle = \frac{2 \times 4 \times 8 \times 8 \times 2 \times 6 \times 8 \times 16 \times 14}{1 \times 2 \times 8 \times 4 \times 2 \times 4 \times 8 \times 6 \times 8} \quad 8 \times 14 = 112 \dots$$



07/05/2015

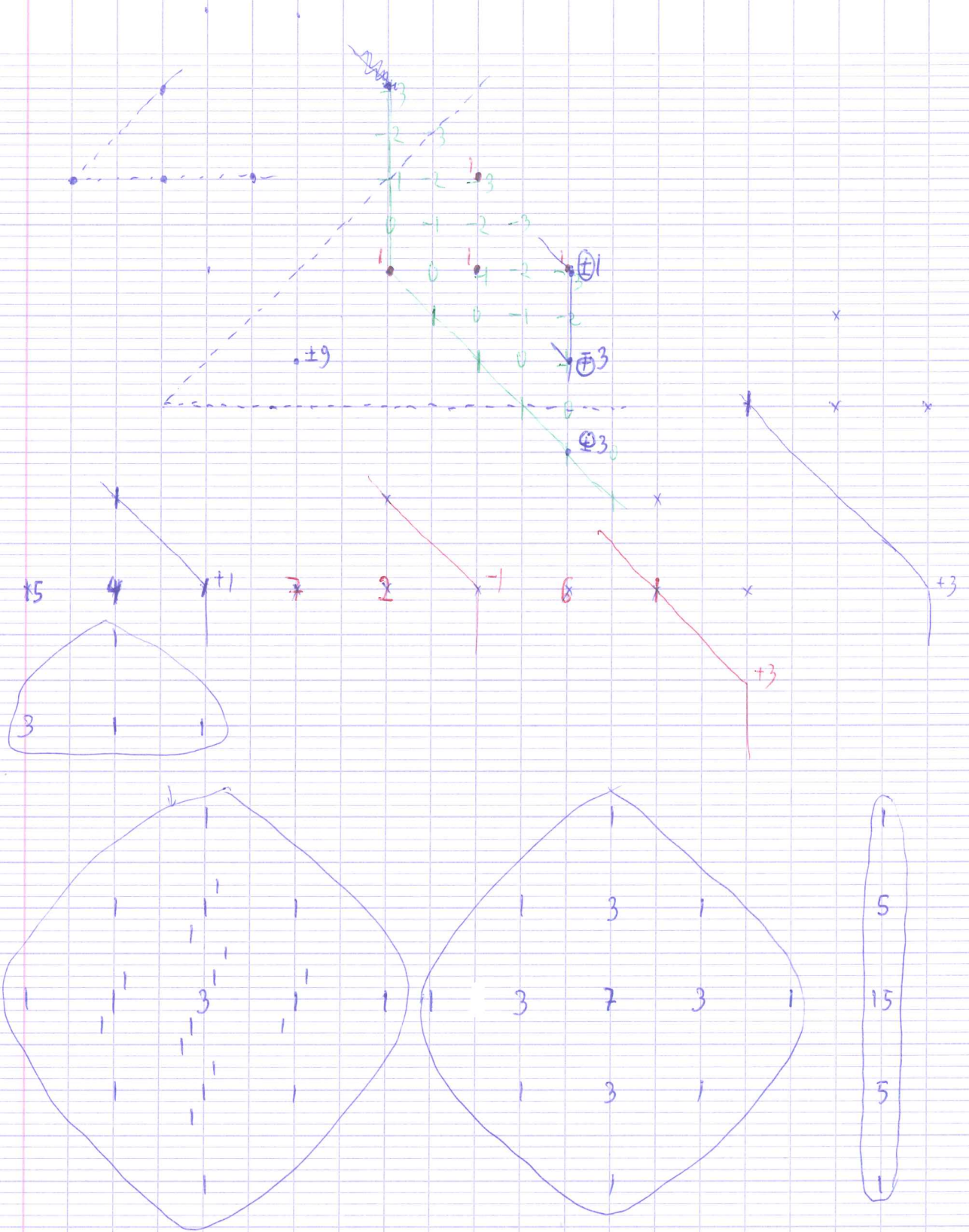


1	1	1	1
1	2	2	1
1	2	2	1
1	1	1	1
1	2	2	1
2	4	4	2
2	4	4	2
1	2	2	1
1	2	2	1
2	4	4	2
1	2	2	1
1	1	1	1
1	2	2	1
1	1	1	1

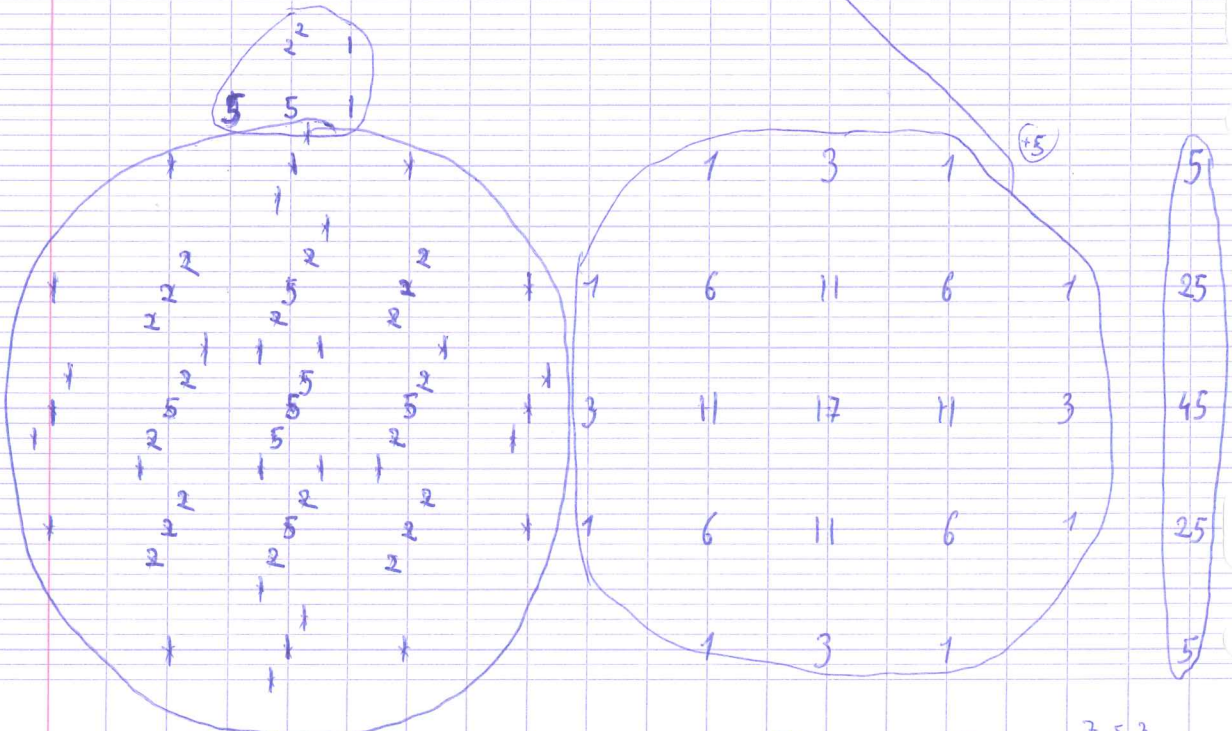
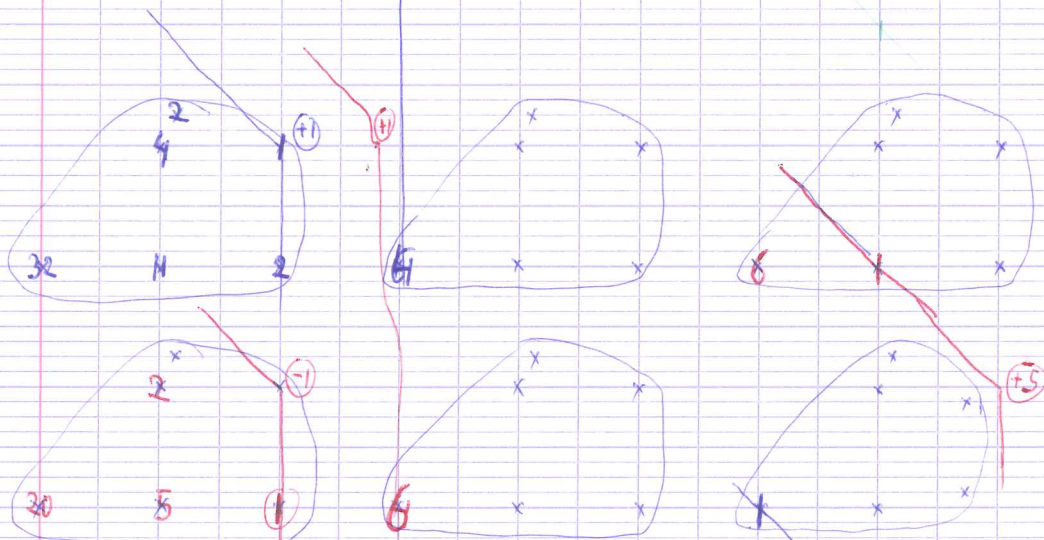
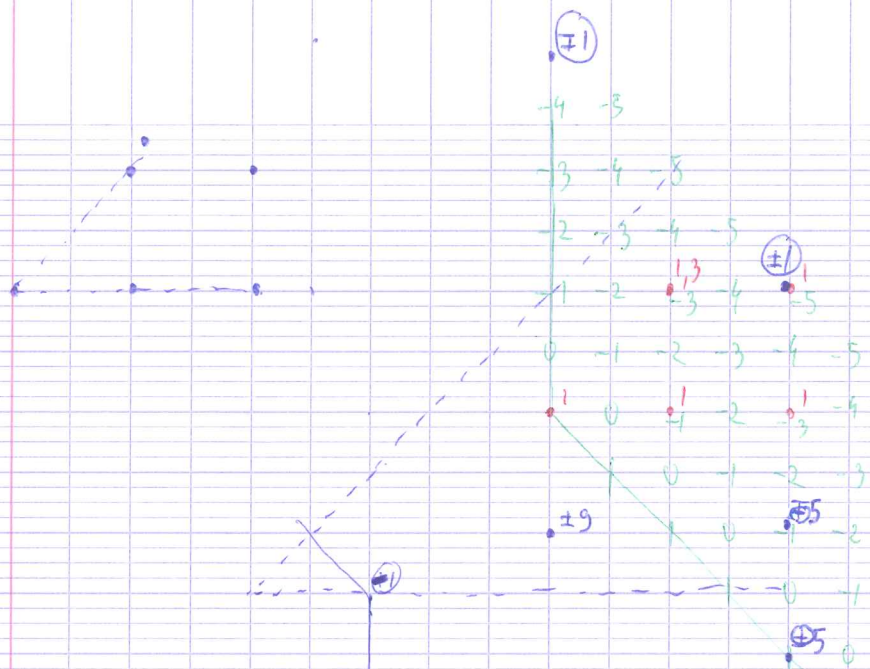
4	6	6	4	20
6	12	12	6	36
6	12	12	6	36
4	6	6	4	20

Tot. dim. $1 \times 8 + 1 \times 24 + 2 \times 24 + 4 \times 8 = (1+3+6+4) \times 8 = 14 \times 8 = 112$

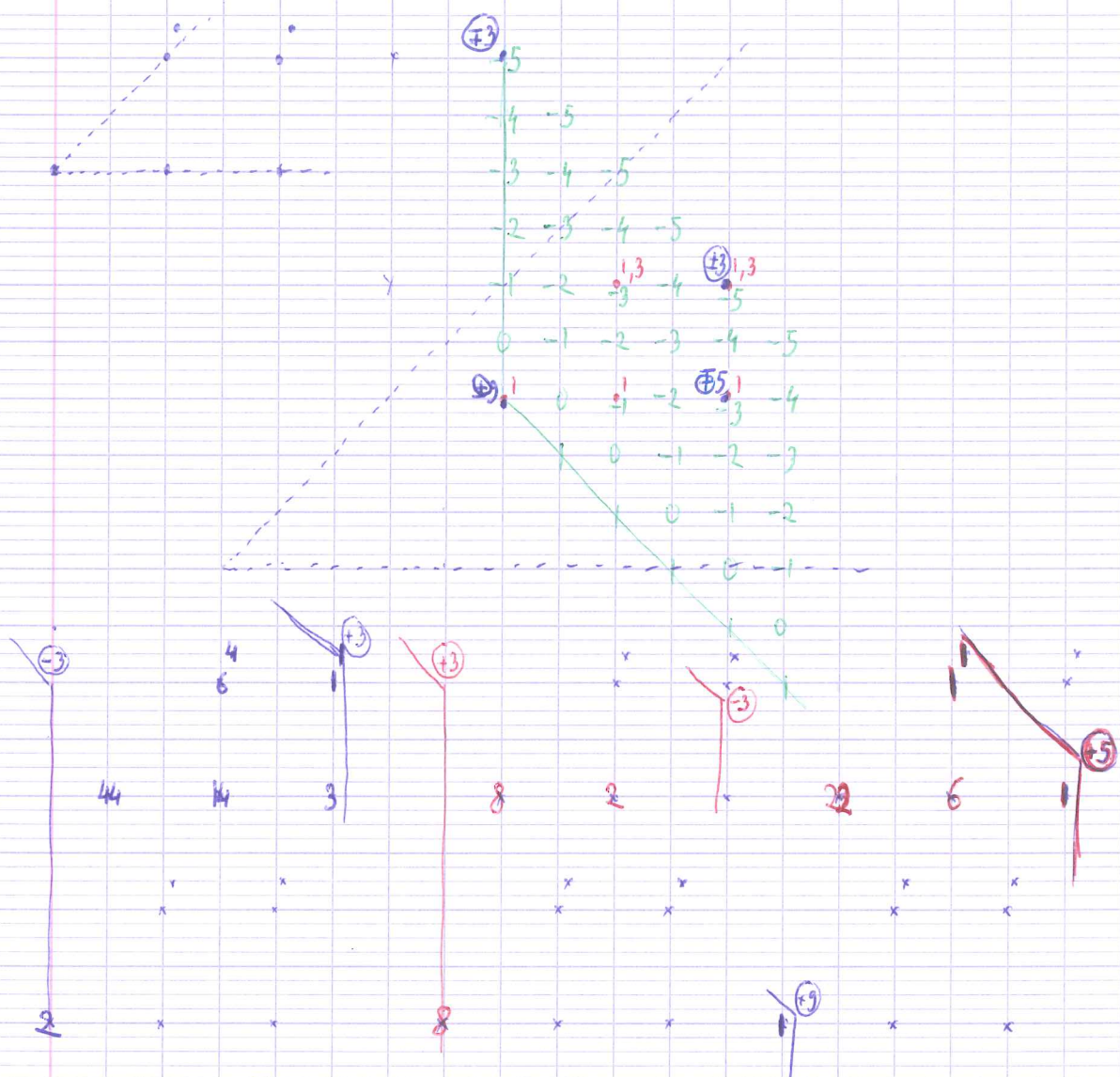
Formule de Weyl: $\prod_{\alpha \in \Delta^+} \frac{1}{8} \langle (\alpha, \alpha) \rangle = \frac{4}{1} \frac{2}{2} \frac{6}{3} \frac{10}{4} \frac{2}{2} \frac{4}{4} \frac{12}{6} \frac{14}{8} \frac{14}{8}$ (4x2x14) OK.



Dim. totale: 27; formule de Weyl: $\begin{pmatrix} 9 & 3 & 1 \\ 5 & 3 & 1 \end{pmatrix} \rightarrow \frac{9}{5} \frac{3}{3} \frac{1}{1} \frac{12}{8} \frac{10}{8} \frac{4}{4} \frac{6}{2} \frac{8}{4} \frac{2}{2} \text{ (OK)}$

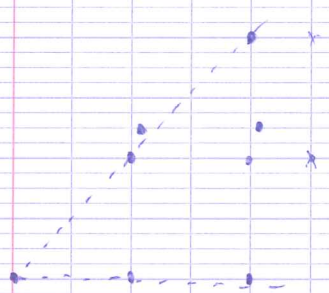


Total: $5 + 5 \times 6 + 1 \times 6 + 2 \times 12 + 2 \times 8 + 1 \times 24 = 5 + 36 + 6 + 24 = 71$ (circled 71) formula de Degl: $\binom{95}{531}$ $\begin{matrix} 7 & 5 & 3 \\ 8 & 5 & 1 & 14 & 10 & 6 & 4 & 2 \\ 8 & 8 & 1 & 14 & 10 & 6 & 4 & 2 \\ 8 & 8 & 1 & 14 & 10 & 6 & 4 & 2 \end{matrix}$ $7 \times 5 = 35$



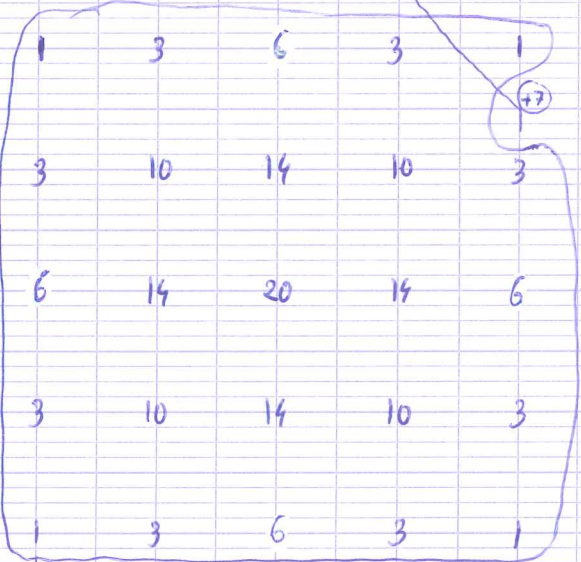
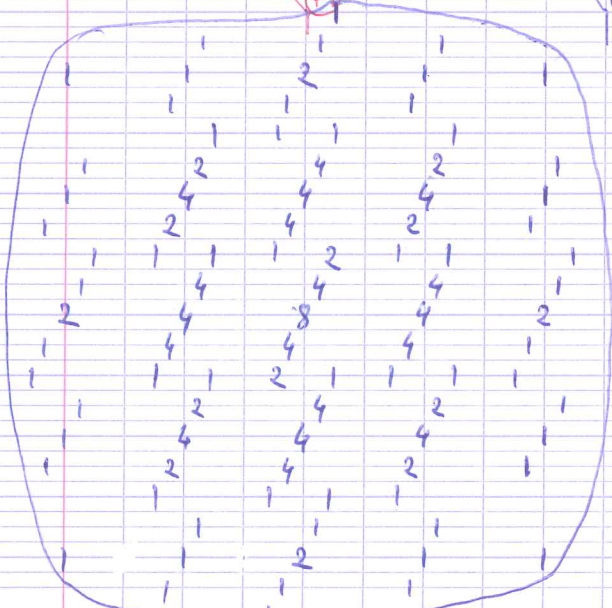
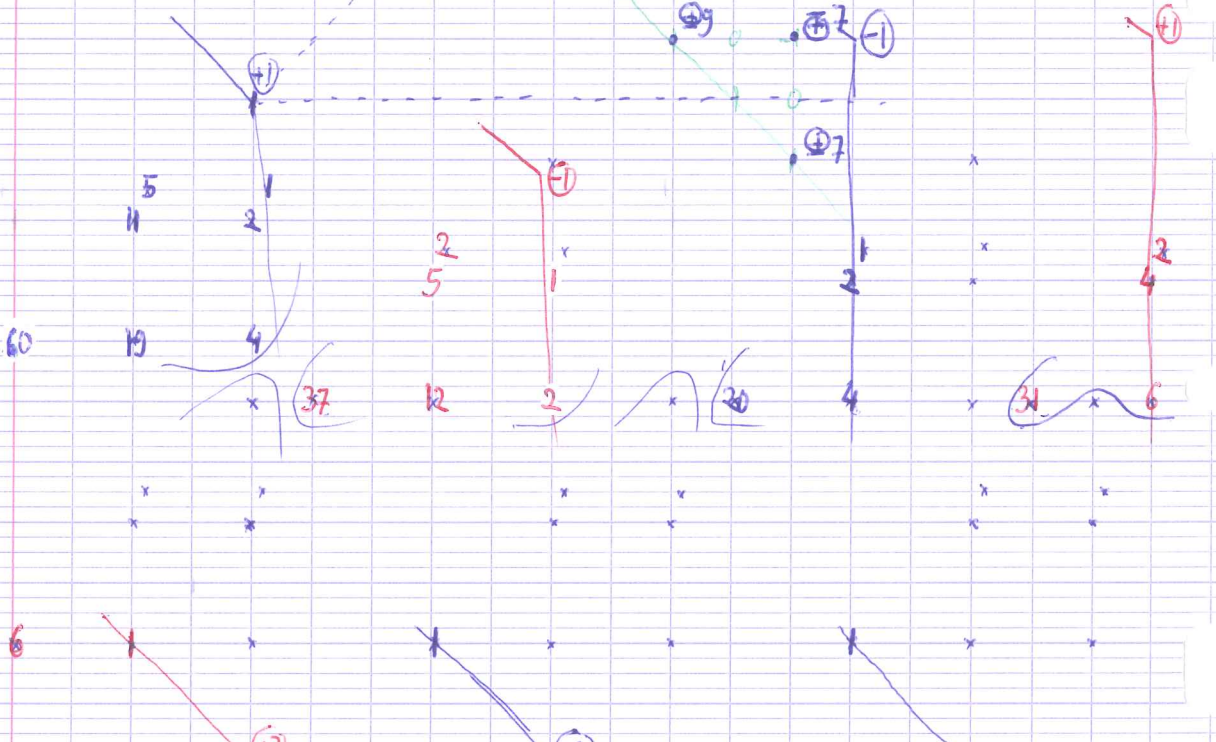
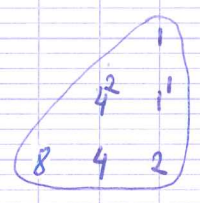
<table border="1"> <tr><td>5</td><td>1</td></tr> <tr><td>9</td><td>6</td></tr> </table>					5	1	9	6	<table border="1"> <tr><td>3</td><td>4</td><td>3</td><td></td><td></td></tr> <tr><td>3</td><td>13</td><td>18</td><td>13</td><td>3</td></tr> <tr><td>4</td><td>18</td><td>25</td><td>18</td><td>4</td></tr> <tr><td>3</td><td>13</td><td>18</td><td>13</td><td>3</td></tr> <tr><td>3</td><td>4</td><td>3</td><td></td><td></td></tr> </table>					3	4	3			3	13	18	13	3	4	18	25	18	4	3	13	18	13	3	3	4	3			10																																														
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1	1	1	1	1																																																																																	
1	3	5	6	5																																																																																	
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4	18	25	18	4																																																																																	
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3	4	3																																																																																			

Total: $9 + 6 \times 6 + 2 \times 6 + 5 \times 12 + 3 \times 8 + 1 \times 24 + 1 \times 24 =$
 $= 2^3 + 2^2 \cdot 3^2 + 2^2 \cdot 3 + 3 \times 2^2 \cdot 3 + 2^3 + 2^2 \cdot 3 + 2^3 + 2^3$
 $= 2^3(2 + 2 \cdot 3 + 2 + 3 + 2 + 3 + 2 + 3) = 2^3(2 + 6 + 2 + 6 + 2 + 6) = 2^3(24) = 192$
 $= 2^3(2 + 2 \cdot 3 + 2 + 3 + 2 + 3 + 2 + 3) = 2^3(24) = 192$
 Formule de Weyl: (453) (531) (73) (2)
 $27 \times 7 = 189$ OK.



-5	-6	7	⑦1	
-4	-5	-6	-7	
-3	-4	-5	-6	7
-2	-3	-4	-5	-6
1	-2	3	-4	-5
0	-1	-2	-3	-4
1	0	1	-2	3
		0	-1	-2

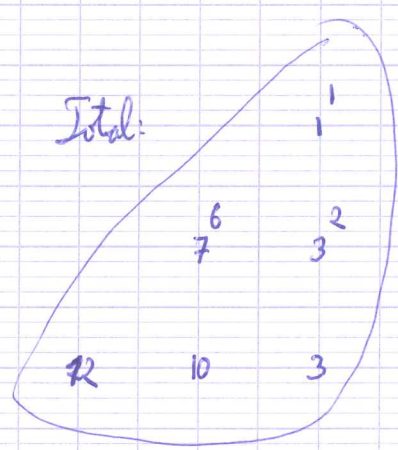
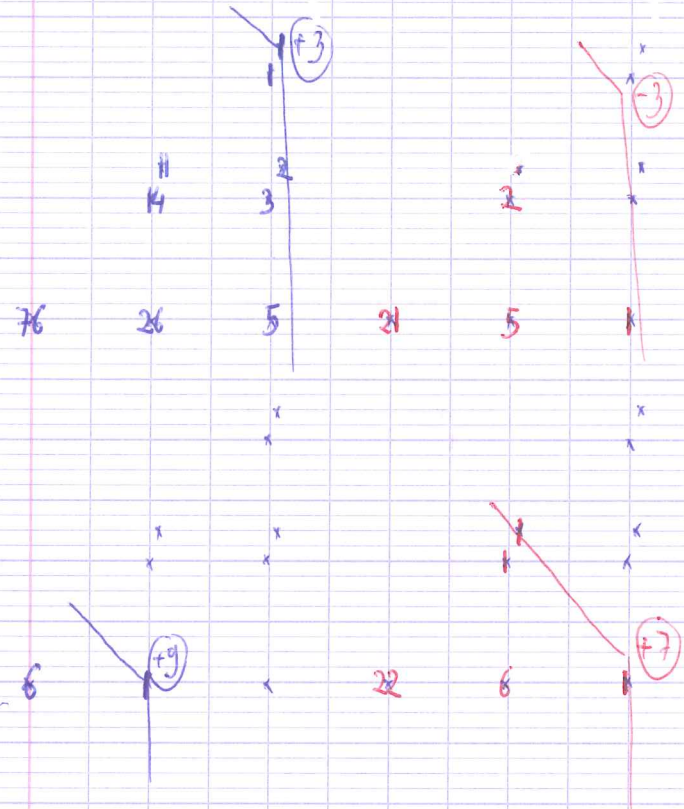
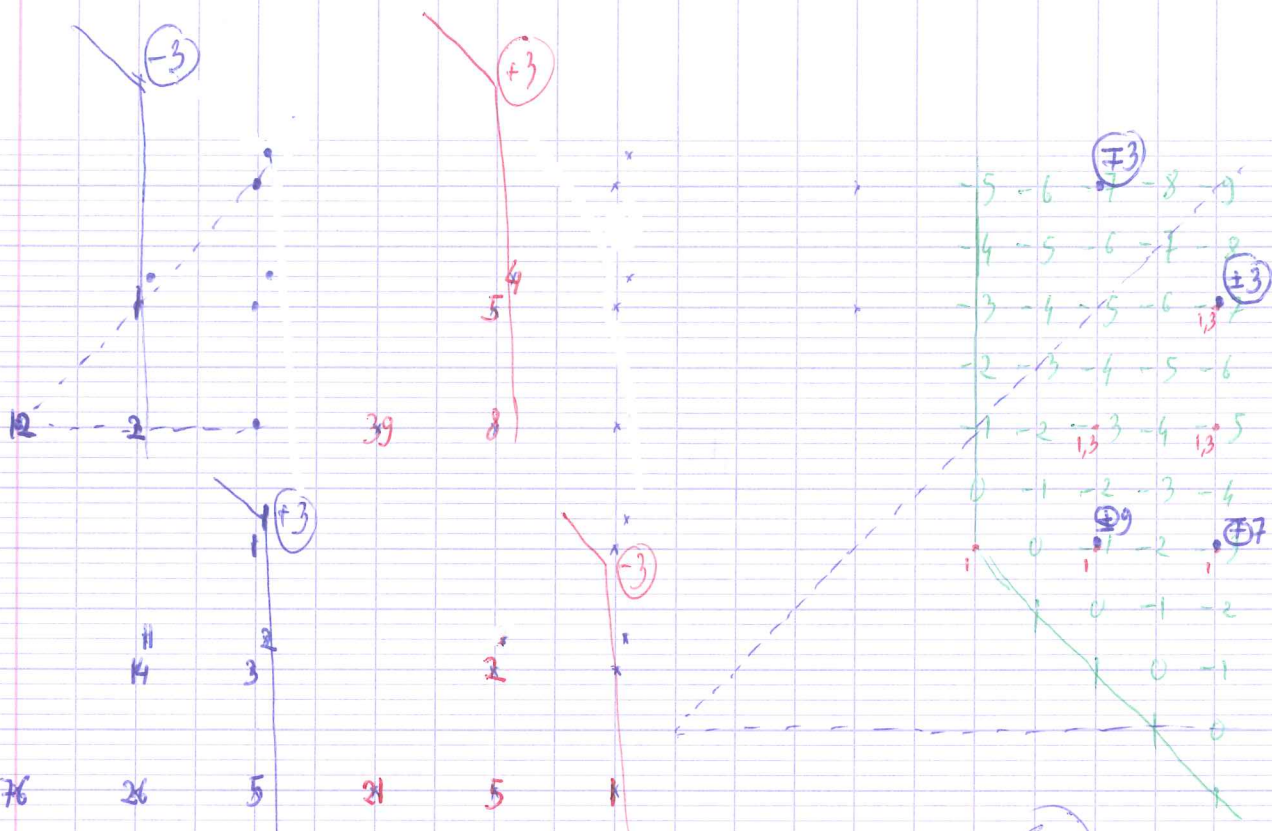
Total:



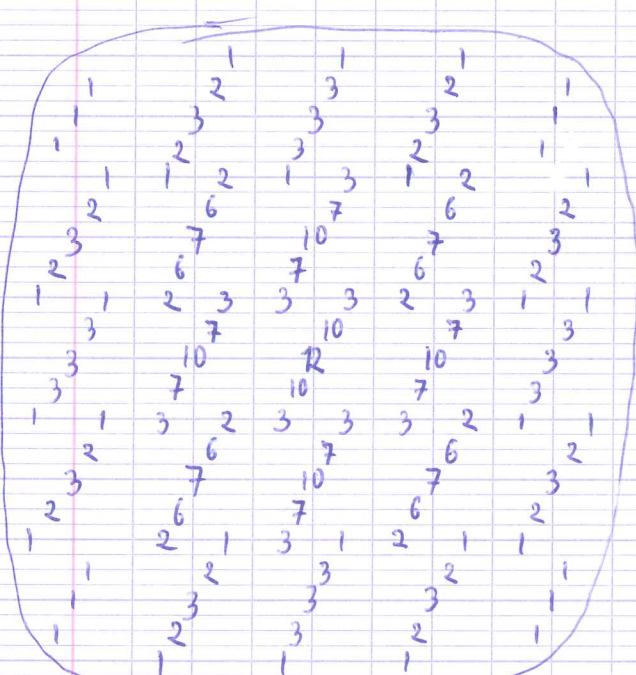
- 14
- 40
- 60
- 40
- 14

Total: $8 + 4 \times 6 + 2 \times 6 + 4 \times 12 + 2 \times 8 + 1 \times 24 + 1 \times 12 + 1 \times 24 =$
 $= 8 + 36 + 48 + 16 + 60$
 $= 24 + 36 + 48 + 60 = \textcircled{768}$

Formule de Weyl: $\frac{\begin{pmatrix} 471 \\ 531 \end{pmatrix}}{\begin{pmatrix} 471 \\ 531 \end{pmatrix}} \rightarrow \frac{471}{831} \frac{16}{8} \frac{10}{8} \frac{8}{4} \frac{2}{2} \frac{8}{4} \frac{8}{4}$
 $= 2^3 \times 3 \times 7 = \textcircled{768}$



$96 - 82 = 14$

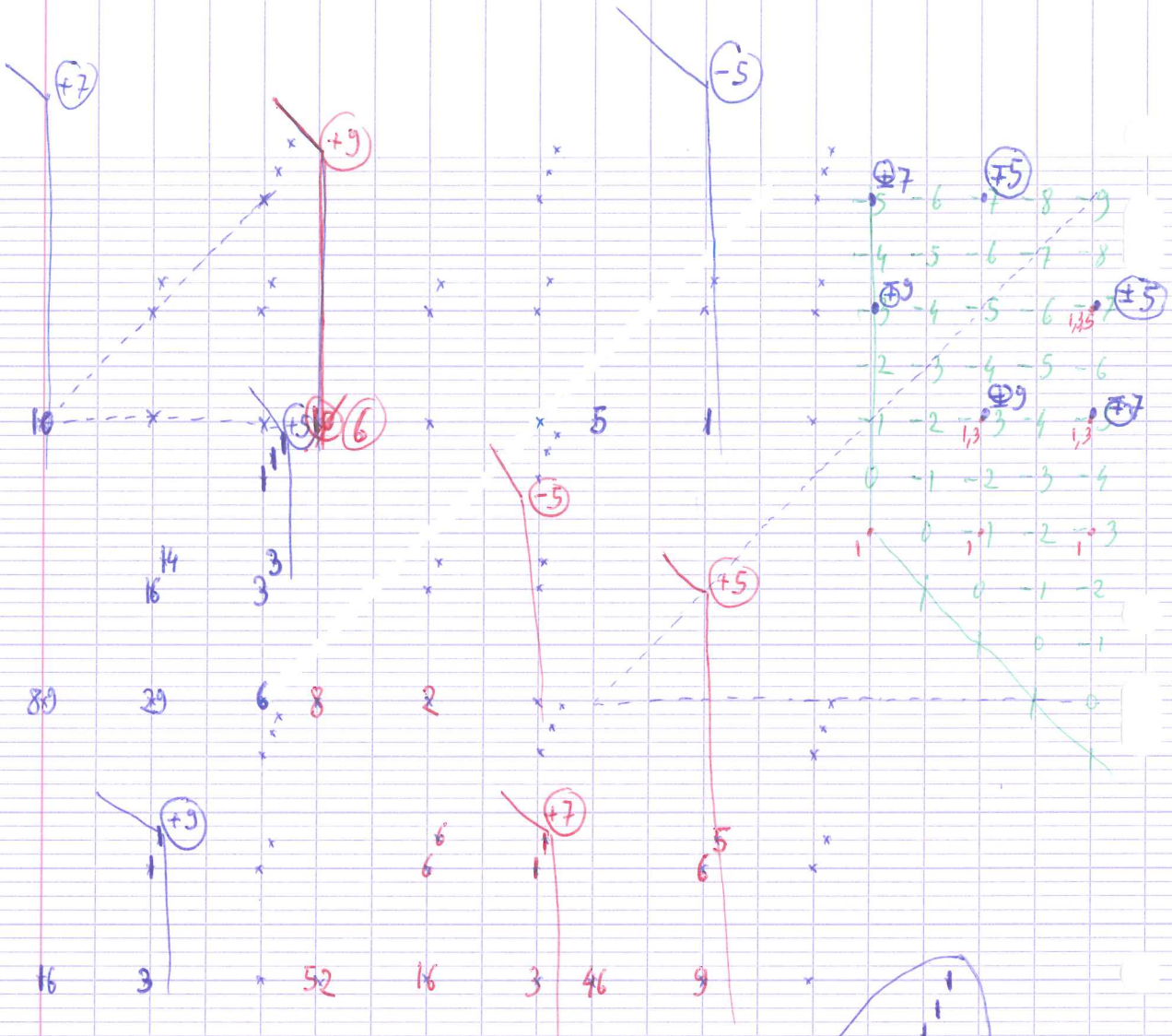


3	9	11	9	3	38
9	23	30	23	9	94
11	30	39	30	11	120
9	23	30	23	9	94
3	9	11	9	3	38

Total: $12 + 10 \times 6 + 3 \times 6 + 7 \times 12 + 6 \times 8 + 3 \times 24 + 2 \times 24 + 1 \times 24 + 1 \times 12 = 180 + 60 + 144 + 12 = 378$

Formule de Weyl: $\frac{973}{531} \rightarrow \frac{9 \cdot 7 \cdot 3}{5 \cdot 3 \cdot 1} \rightarrow \frac{9 \cdot 7 \cdot 3 \cdot 16}{5 \cdot 3 \cdot 1 \cdot 8} = \frac{12 \cdot 10 \cdot 2 \cdot 8 \cdot 4}{2 \cdot 6 \cdot 4 \cdot 2 \cdot 4 \cdot 2} = \frac{378}{168} = 2.25$

$9 \times 7 \times 12 = 756$
 $27 \times 14 = 270 + 108 = 378$



14
 16
 3
 3
 89
 29
 6
 8
 2
 6
 6
 16
 3
 46
 9

Total:

1	1	1
5	4	2
8	6	3

1	1	1	1	1
1	2	2	2	1
1	2	3	2	1
1	1	2	1	1
2	4	5	4	2
2	5	6	5	2
1	2	3	2	1
3	6	8	6	3
2	5	6	5	2
1	2	3	2	1
2	4	5	4	2
1	1	2	1	1
2	2	3	2	1
1	1	2	1	1
1	2	2	1	1
1	1	1	1	1

5	8	9	8	5	35
8	17	20	17	8	70
9	20	26	20	9	84
8	17	20	17	8	70
5	8	9	8	5	35

Total: $8 + 6 \times 6 + 5 \times 12 + 4 \times 8 + 3 \times 6 + 1 \times 12 + 1 \times 8 + 2 \times 2 + 2 \times 2 + 1 \times 2 =$
 $= 8 + 36 + 60 + 32 + 18 + 12 + 8 + 120 = 100 + 36 + 30 + 8 + 120 = 294$

Formule de Neuf: $\frac{9 \times 7 \times 5}{3 \times 2 \times 1} \rightarrow \frac{9 \times 7 \times 5}{6} = 105$
 $2 \times 3 \times 7^2 = 294$