ON SOME SYSTEMS OF DIFFERENCE EQUATIONS. Part 3.

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Dedicated to the memory of Professor N.M.Korobov.

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§2.0. Foreword.

This is part of my talk 31.05.2006 on on the International Conference "Analytical and Combinatorial Methods in Number Theory and Geometry," in memory of Professor N.M. Korobov. Moscow, 25.05 – 31.05

Acknowledgments. I express my deepest thanks to Professors B.Z.Moroz, I.I. Piatetski-Shapiro, A.G.Aleksandrov, P.Bundshuh and S.G.Gindikin for help and support.

§3.1. Pass from (τ, μ) to ν and test of the equality $$-\nu^{6+4l}E_{4+2l} = A_l^*(z;\nu)A_l^*(z;-\nu).$$

The matrix $A_l^*(z;\nu)$ in (31), (32) of Part 2 have the form

$$A_l^*(z;\nu) = \frac{1}{2}U_l^{\vee}(z;\nu) + U_l^{\wedge}(z;\nu)\tau, \tag{1}$$

where

$$U_l^{\vee}(z,\mu) = \sum_{k=0}^{3+2l} \mu^k(R_l^{\vee}(k)) + (z-1)V_l^{\vee}(k), \tag{2}$$

$$U_l^{\wedge}(z,\mu) = \sum_{k=0}^{2+2l} \mu^k(R_l^{\wedge}(k)) + (z-1)V_l^{\wedge}(k)), \tag{3}$$

$l = 0, 1, 2,$ and matrices $R_l^{\vee}(k)$, $V_l^{\vee}(k)$, $R_l^{\wedge}(k))$, $V_l^{\wedge}(k)$ are specified in the Part 2. Therefore the matrix $A_l^*(z;\nu)$ can be represented in the form

$$A_l^*(z;\nu) = Q_l^*(z;\nu) + (z-1)W_l^*(z;\nu). \tag{4}$$

$$Q_l^*(z;\nu) = \sum_{s=0}^{6+4l} \nu^s, R_l^*(s), \tag{5}$$

$$W_l^*(z;\nu) = \sum_{s=0}^{6+4l} \nu^k V_l^*(s)). \tag{6}$$

We calculte the marices $R_l^*(s)$ and $V_l^*(s)$ for $s = 0, ..., 6+4l$ now. Since

$$\mu^k = \sum_{\kappa=0}^{k} \binom{k}{\kappa} \nu^{k+\kappa},$$

it follows that

$$\begin{aligned} Q_l^*(z;\nu) = &\sum_{k=0}^{3+2l} \left(\sum_{\kappa=0}^{k} \binom{k}{\kappa} \nu^{k+\kappa} \frac{1}{2}(R_l^\vee(k) + R_l^\wedge(k) \right) + \\ &\sum_{k=0}^{2+2l} \left(\sum_{\kappa=0}^{k} \binom{k}{\kappa} \nu^{k+\kappa+1} \right) R_l^\wedge(k) = \\ &\sum_{s=0}^{6+4l} \left(\sum_{k=0}^{s} \nu^s \binom{k}{s-k} \frac{1}{2}(R_l^\vee(k) + R_l^\wedge(k)) \right) + \\ &\sum_{s=1}^{6+4l} \left(\sum_{k=0}^{s-1} \nu^s \binom{k}{s-k-1} R_l^\wedge(k) \right) = \\ &\sum_{s=0}^{6+4l} \left(\sum_{k\in[s/2],s]\cap\mathbb{Z}} \nu^s \binom{k}{s-k} \frac{1}{2}(R_l^\vee(k) + R_l^\wedge(k)) \right) + \\ &\sum_{s=1}^{6+4l} \left(\sum_{k\in[(s-1)/2],s-1]\cap\mathbb{Z}} \nu^s \binom{k}{s-k-1} R_l^\wedge(k) \right), \end{aligned} \tag{7}$$

$$\begin{aligned} W_l^*(z;\nu) = &\sum_{k=0}^{3+2l} \left(\sum_{\kappa=0}^{k} \binom{k}{\kappa} \nu^{k+\kappa} \right) \frac{1}{2}(V_l^\vee(k) + V_l^\wedge(k) + \\ &\sum_{k=0}^{2+2l} \left(\sum_{\kappa=0}^{k} \binom{k}{\kappa} \nu^{k+\kappa+1} \right) V_l^\wedge(k) = \\ &\sum_{s=0}^{6+4l} \left(\sum_{k=0}^{s} \nu^s \binom{k}{s-k} \frac{1}{2}(V_l^\vee(k) + V_l^\wedge(k)) \right) + \end{aligned} \tag{8}$$

$$\sum_{s=1}^{6+4l}\left(\sum_{k=0}^{s-1}\nu^s\binom{k}{s-k-1}V_l^{\wedge}(k)\right)=$$

$$\sum_{s=0}^{6+4l}\nu^s\left(\sum_{k=0}^{s}\binom{k}{s-k}\frac{1}{2}(V_l^{\vee}(k)+V_l^{\wedge}(k))\right)+$$

$$\sum_{s=1}^{6+4l}\nu^s\left(\sum_{k=0}^{s}\binom{k}{s-k-1}V_l^{\wedge}(k)\right)=$$

$$\sum_{s=0}^{6+4l}\nu^s\left(\sum_{k\in[s/2,s]\cap\mathbb{Z}}\binom{k}{s-k}\frac{1}{2}(V_l^{\vee}(k)+V_l^{\wedge}(k))\right)+$$

$$\sum_{s=0}^{6+4l}\nu^s\left(\sum_{k\in[(s-1)/2],s-1]\cap\mathbb{Z}}\binom{k}{s-k-1}V_l^{\wedge}(k)\right),$$

where

$$l=0,\ 1,\ 2,\ R_l^{\vee}(k)=0 \text{ for } k\in[4+2l,+\infty)\cap\mathbb{Z},$$

and

$$V_l^{\wedge}(3+2l)=0 \text{ for } k\in[3+2l,+\infty)\cap\mathbb{Z}.$$

So,

$$\left(R_l^{*}(s)=\sum_{k\in[s/2,s]\cap\mathbb{Z}}\binom{k}{s-k}\frac{1}{2}(R_l^{\vee}(k)+R_l^{\wedge}(k))\right)+ \tag{9}$$

$$\sum_{k\in[(s-1)/2],s-1]\cap\mathbb{Z}}\binom{k}{s-k-1}R_l^{\wedge}(k),$$

$$\left(V_l^{*}(s)=\sum_{k\in[s/2,s]\cap\mathbb{Z}}\binom{k}{s-k}\frac{1}{2}(V_l^{\vee}(k)+V_l^{\wedge}(k))\right)+ \tag{10}$$

$$\sum_{k\in[(s-1)/2],s-1]\cap\mathbb{Z}}\binom{k}{s-k-1}V_l^{\wedge}(k)$$

where $s=0,\ ...,\ 6+2l$. The matrices $R_l^{\vee}(k)$, $V_l^{\vee}(k)$ for $k\in[0,3+2l)\cap\mathbb{Z}$, and $R_l^{\wedge}(k)$, $V_l^{\wedge}(k)$ for $k\in[0,2+2l)\cap\mathbb{Z}$ are found in the Part 2.

Now we can check (34) of the Part 2 of this paper, i.e. the equality

$$-\nu^{6+4l}E_{4+2l}=A_l^{*}(z;\nu)A_l^{*}(z;-\nu) \tag{11}$$

for $l=0,1,2$; we must to check the following equalities:

$$\sum_{k=0}^{s}R_l^{*}(k)(-1)^{s-k}R_l^{*}(s-k)=0E_{4+2l} \tag{12}$$

for $s \in [0, 12+8l] \cap \mathbb{Z} \setminus \{6+4l\}$,

$$\sum_{k=0}^{6+4l} R_l^*(k)(-1)^k R_l^*(6+4l-k) = -E_{4+2l}, \tag{13}$$

$$\sum_{k=0}^{s}(-1)^{s-k}(R_l^*(k)V_l^*(s-k) + V_l^*(k)R_l^*(s-k)) = 0E_{4+2l} \tag{14}$$

for $s \in [0, 12+8l] \cap \mathbb{Z}$,

$$\sum_{k=0}^{s} V_l^*(k)(-1)^{s-k}V_l^*(s-k) = 0E_{4+2l} \tag{15}$$

for $s \in [0, 12+8l] \cap \mathbb{Z}$. Let

$$H_l^\vee(k) = R_l^\vee(k) - V_l^\vee(k),\ H_l^\wedge(k) = R_l^\wedge(k) - V_l^\wedge(k),$$

$$H_l^*(k) = R_l^\vee(k) - V_l^*(k),$$

where

$$l = 0,\ 1,\ 2,\ k \in [0, +\infty) \cap \mathbb{Z},\ \ R_l^\vee(k) = V_l^\vee(k) = 0E_{4+2l}$$

for $l \in (3+2l, +\infty) \cap \mathbb{Z}$, and

$$R_l^\wedge(k) = V_l^\wedge(k) = 0E_{4+2l} \text{ for } l \in (2+2l, +\infty) \cap \mathbb{Z}.$$

Then (after subtraction (10) from (9)) we obtain the equality

$$H_l^*(s) = \left(\sum_{k \in [s/2, s-1] \cap \mathbb{Z}} \binom{k}{s-k} \frac{1}{2}(H_l^\vee(k) + H_l^\wedge(k)) \right) + \sum_{k \in [(s-1)/2], s-1] \cap \mathbb{Z}} \binom{k}{s-k-1} H_l^\wedge(k). \tag{16}$$

Let

$$S_l^*(z;\nu) = \sum_{s=0}^{6+4l} \nu^s H_l^*(s), \tag{17}$$

where $l = 0, 1, 2$. Then, in in view of (5), (6), (9), (10),

$$S_l^*(z;\nu) = Q_l^*(z;\nu) - W_l^*(z;\nu), \tag{18}$$

and, in view of (9),

$$A_l^*(z;\nu) = S_l^*(z;\nu) + zW_l^*(z;\nu). \tag{19}$$

Therefore we can replace the check of the equalities (12), (13) and (14) by the check equalities

$$\sum_{k=0}^{s} H_l^*(k)(-1)^{s-k}H_l^*(s-k) = 0E_{4+2l} \tag{20}$$

for $s \in [0, 12+8l] \cap \mathbb{Z} \diagdown \{6+4l\}$,

$$\sum_{k=0}^{6+4l} H_l^*(k)(-1)^k H_l^*(6+4l-k) = -E_{4+2l}, \tag{21}$$

$$\sum_{k=0}^{s} (-1)^{s-k}(H_l^*(k)V_l^*(s-k) + V_l^*(k)H_l^*(s-k)) = \tag{22}$$

$$\sum_{k=0}^{s} ((-1)^{s-k} H_l^*(k)V_l^*(s-k) + (-1)^k V_l^*(s-k)H_l^*(k)) = 0E_{4+2l}$$

for $l = 0,\ 1,\ 2,\ s = \in [0, 12+8l] \cap \mathbb{Z}$. Let $m \in \mathbb{N}$, E_m denotes the $m \times m$ unit matrix, $e_{m,i,k}$ for for $i = 1, ..., m$, $k = 1, ..., m$ denotes the $m \times m$- matrix, which has 1 on the intersection its i-th row and k-th column, and all the other its elements are equal to 0. Let further

$$N_m = \sum_{k=1}^{m-1} e_{m,k,k+1}.$$

It follows from the results of the Part 2, that

$$H_0^{\vee}(0) = -E_4 - 4N_4 - 8(N_4)^2 - 24(N_4)^3,$$

$$H_0^{\vee}(1) = -3E_4 - 8N_4,$$

$$H_0^{\vee}(k) = H_0^{\wedge}(k) = 0E_4 \text{ for } k \in [2, +\infty] \cap \mathbb{Z}, \tag{23}$$

$$H_0^{\wedge}(0) = E_4 + 4N_4 + 8(N_4)^2,$$

$$H_0^{\wedge}(1) = E_4,$$

$$H_1^{\vee}(0) = E_6 + 6N_6 + 18(N_6)^2 + 38(N_6)^3 + 66(N_6)^4 + 204(N_6)^5,$$

$$H_1^{\vee}(1) = 5E_6 + 24N_6 + 54(N_6)^2 + 76(N_6)^3,$$

$$H_1^{\vee}(2) = 5E_4 + 12N_6,$$

$$H_1^{\vee}(k) = H_1^{\wedge}(k) = 0E_6 \text{ for } k \in [3, +\infty] \cap \mathbb{Z}, \tag{24}$$

$$H_1^{\wedge}(0) = -E_6 - 6N_6 - 18(N_6)^2 - 38(N_6)^3 - 66(N_6)^4,$$

$$H_1^{\wedge}(1) = -3E_6 - 12N_6 - 18(N_6)^2,$$

$$H_1^{\wedge}(2) = -E_6,$$

$$H_2^{\vee}(0) = -E_8 - 8N_8 - 32(N_8)^2 - 88(N_8)^3 - 192(N_8)^4 -$$

$$360(N_8)^5 - 608(N_8)^6 - 1904(N_8)^7,$$

$$H_2^{\vee}(1) = -7E_8 - 48N_8 - 160(N_6)^2 - 352(N_8)^3 - 576(N_8)^4 -$$

$$720(N_8)^5,$$

$$H_2^{\vee}(2) = -14E_8 - 72N_8 - 160(N_6)^2 - 176(N_8)^3,$$

$$H_2^{\vee}(3) = -7E_8 - 16N_8,$$

$$H_2^\vee(k) = H_2^\wedge(k) = 0E_8 \text{ for } k \in [4, +\infty] \cap \mathbb{Z}, \tag{25}$$

$$H_2^\wedge(0) = E_8 + 8N_8 + 32(N_6)^2 + 88(N_8)^3 + 192(N_8)^4 +$$
$$360(N_8)^5 + 608(N_8)^6,$$
$$H_2^\wedge(1) = 5E_8 + 32N_8 + 96(N_6)^2 + 176(N_8)^3 + 192(N_8)^4,$$
$$H_2^\wedge(2) = 6E_8 + 24N_8 + 32(N_6)^2, H_2^\wedge(3) = E_8$$
$$H_2^\wedge(k) = 0E_8 \text{ for } k \in [4, +\infty) \cap \mathbb{Z},$$

So,

$$H_l^\vee(k) \in \mathbb{Z}[N_{4+2l}],$$

where $l = 0,\ 1,\ 2,\ k \in [0, \infty] \cap \mathbb{Z}$. In, view of (16),

$$H_l^*(s) \in \mathbb{Z}[N_{4+2l}],$$

where $l = 0,\ 1,\ 2,\ s \in [0, \infty] \cap \mathbb{Z}$.

Consequently, the equality (20) holds,if $s \equiv 1 \pmod 2$, and we must check this equality only for $s \equiv 0 \pmod 2$. In view of (16), (23) – (25),

$$H_0^*(k) = 0 \text{ if } k \in [4, +\infty) \cap \mathbb{Z}, \tag{26}$$

(i.e., if $(s-1)/2 > 1$,)

$$H_1^*(k) = 0 \text{ if } k \in [6, +\infty) \cap \mathbb{Z}, \tag{27}$$

$$H_2^*(k) = 0 \text{ if } k \in [8, +\infty) \cap \mathbb{Z}, \tag{28}$$

and

$$H_0^*(0) = (1/2)H_0^\vee(0) + (1/2)H_0^\wedge(0) = -12(N_4)^3, \tag{29}$$

$$H_0^*(1) = (1/2)(H_0^\vee(1) + H_0^\wedge(1)) + H_0^\wedge(0) = 8(N_4)^2, \tag{30}$$

$$H_0^*(2) = (1/2)H_0^\vee(1) + (1/2)H_0^\wedge(1)) + \tag{31}$$
$$(1/2)H_0^\vee(2) + (1/2)H_0^\wedge(2)) + H_0^\wedge(1)) = -4N_4,$$

$$H_0^*(3) = H_0^\vee(2) + H_0^\wedge(2))) + (1/2)H_0^\vee(3) + \tag{32}$$
$$(1/2)H_0^\wedge(3)) + H_0^\wedge(1) + H_0^\wedge(2) = E_4,$$

$$H_1^*(0) = (1/2)H_1^\vee(0) + (1/2)H_1^\wedge(0) = 102(N_6)^5, \tag{33}$$

$$H_1^*(1) = (1/2)(H_1^\vee(1) + H_1^\wedge(1)) + H_1^\wedge(0) = -66(N_6)^4, \tag{34}$$

$$H_1^*(2) = (1/2)H_1^\vee(1) + (1/2)H_1^\wedge(1)) + \tag{35}$$
$$(1/2)H_1^\vee(2) + (1/2)H_1^\wedge(2)) + H_1^\wedge(1)) = 38(N_6)^3,$$

$$(36)\quad H_1^*(3) = H_1^\vee(2) + H_1^\wedge(2))) + (1/2)H_1^\vee(3) +$$
$$(1/2)H_1^\wedge(3)) + H_1^\wedge(1) + H_1^\wedge(2) = -18(N_6)^2,$$

$$(37)\quad H_1^*(4) = (1/2)H_1^\vee(2) + (1/2)H_1^\wedge(2) + (3/2)H_1^\vee(3) +$$
$$(3/2)H_1^\wedge(3)) + (1/2)H_1^\vee(4) + (1/2)H_1^\wedge(4)+$$
$$2H_1^\wedge(2) + H_1^\wedge(3) = 6N_6,$$

$$(38)\quad H_1^*(5) = (3/2)H_1^\vee(3) + (3/2)H_1^\wedge(3) + 2H_1^\vee(4) +$$
$$2H_1^\wedge(4) + (1/2)H_1^\vee(5) + (1/2)H_1^\wedge(5)+$$
$$H_1^\wedge(1) + 3H_1^\wedge(3) + H_1^\wedge(4) = -E_6,$$

$$(39)\quad H_2^*(0) = (1/2)H_2^\vee(0) + (1/2)H_2^\wedge(0) = -952(N_8)^7,$$

$$(40)\quad H_2^*(1) = (1/2)(H_2^\vee(1) + H_2^\wedge(1)) + H_2^\wedge(0) = 608(N_8)^6,$$

$$(41)\quad H_2^*(2) = (1/2)H_2^\vee(1) + (1/2)H_2^\wedge(1) +$$
$$(1/2)H_2^\vee(2) + (1/2)H_2^\wedge(2)) + H_2^\wedge(1) = -360(N_8)^5,$$

$$(42)\quad H_2^*(3) = H_2^\vee(2) + H_2^\wedge(2) + (1/2)H_2^\vee(3) +$$
$$(1/2)H_2^\wedge(3) + H_2^\wedge(1) + H_2^\wedge(2) = 192(N_8)^4,$$

$$(43)\quad H_2^*(4) = (1/2)H_2^\vee(2) + (1/2)H_2^\wedge(2) + (3/2)H_2^\vee(3) +$$
$$(3/2)H_2^\wedge(3)) + (1/2)H_2^\vee(4) + (1/2)H_2^\wedge(4)+$$
$$2H_2^\wedge(2) + H_2^\wedge(3) = -88(N_8)^3,$$

$$(44)\quad H_2^*(5) = (3/2)H_2^\vee(3) + (3/2)H_2^\wedge(3) + 2H_2^\vee(4) +$$
$$2H_2^\wedge(4) + (1/2)H_2^\vee(5) + (1/2)H_2^\wedge(5)+$$
$$H_2^\wedge(2) + 3H_2^\wedge(3) + H_2^\wedge(4) = 32(N_8)^2,$$

$$(45)\quad H_2^*(6) = (1/2)H_2^\vee(3) + (1/2)H_2^\wedge(3) + 3H_2^\vee(4) +$$
$$3H_2^\wedge(4) + (5/2)H_2^\vee(5) + (5/2)H_2^\wedge(5)+$$
$$(1/2)H_2^\vee(6) + (1/2)H_2^\wedge(6)+$$
$$3H_2^\wedge(3) + 4H_2^\wedge(4) + H_2^\wedge(5) = -8N_8,$$

$$(46)\quad H_2^*(7) = 2H_2^\vee(4) + 2H_2^\wedge(4) + 5H_2^\vee(5) +$$
$$5H_2^\wedge(5) + 3H_2^\vee(6) + 3H_2^\wedge(5)+$$

$$(1/2)H_2^{\vee}(7) + (1/2)H_2^{\wedge}(7) +$$
$$H_2^{\wedge}(3) + 6H_2^{\wedge}(4) + 5H_2^{\wedge}(5) + H_2^{\wedge}(6) = E_8.$$

So,

$$H_l^*(s) = h_l^*(s)(N_{4+2l})^{3+2l-s}, \tag{47}$$

where $(N_{4+2l})^0 = E_{4+2l}$, $(N_{4+2l})^{3+2l-s} = 0E_{4+2l}$, and $h_l^*(s) = 0$, for all the $s \in ((-\infty, 0) \cup (4+2l, +\infty)) \cap \mathbb{Z}$,

$$h_0^*(0) = -12,\ h_0^*(1) = 8,\ h_0^*(2) = -4,\ h_0^*(3) = 1,$$

$$h_1^*(0) = 102,\ h_1^*(1) = -66,$$
$$h_1^*(2) = 38,\ h_1^*(3) = -18,\ h_1^*(4) = 6,\ h_1^*(5) = -1,$$

$$h_2^*(0) = -952,\ h_2^*(1) = 608,\ h_2^*(2) = -360,\ h_2^*(3) = 192,$$
$$h_2^*(4) = -88,\ h_2^*(5) = 32,\ h_2^*(6) = -8,\ h_2^*(7) = 1.$$

Since

$$H_0^*(0)H_0^*(0) = 0,$$

it follows that equality (20) holds for $l = 0, s = 0$. Since

$$H_0^*(0)H_0^*(2) = (H_0^*(1))^2 = 0,$$

it follows that equality (20) holds for $l = 0, s = 2$. Since

$$2H_0^*(1)H_0^*(3) = (H_0^*(2))^2 = 16(N_4)^2,$$

it follows that equalitiy (20) holds for $l = 0, s = 4$. Since

$$H_0^*(0)H_0^*(6) = H_0^*(1)H_0^ast(5) = H_0^*(2)H_0^*(4) = 0E_4,$$

and $H_0^*(3))^2 = E_4$ it follows that equalitiy (21) holds for $l = 0$. In view of the equality (26) the equality (20) holds for $l = 0$, $s \in [8, +\infty] \cap \mathbb{Z}$. Since

$$(H_1^*(0))^2 = 0E_6,$$

it follows that equality (20) holds for $l = 1, s = 0$. Since

$$H_2^*(0)H_2^*(2) = (H_2^*(1))^2 = 0E_6,$$

it follows that equality (20) holds for $l = 1,\ s = 2$. Since

$$H_1^*(0)H_1^*(4) = H_1^*(1)H_1^*(3) = (H_1^*(2))^2 = 0E_6,$$

it follows that equality (20) holds for $l = 1, s = 4$. Since

$$H_1^*(0)H_1^*(6) = 0E_6,\ H_1^*(1)H_1^*(5) = 66(N_6)^4,$$

$$H_1^*(2)H_1^*(4) = 228(N_6)^4, (H_1^*(3))^2 = 324(N_6)^4,$$

and $324+2\times 66 = 456 = 2\times 228$ it follows that equality (20) holds for $l=1, s=6$. Since

$$H_1^*(0)H_1^*(8) = H_1^*(1)H_1^*(7) =$$
$$H_1^*(2)H_1^*(6) = 0E_6,\ 2H_1^*(3)H_1^*(5) = (H_1^*(4))^2 = 36(N_6)^2,$$

it follows that equality (20) holds for $l=1, s=8$. Since

$$H_1^*(0)H_1^*(10) = H_1^*(1)H_1^*(9) = H_1^*(2)H_1^*(8) =$$

$$H_1^*(3)H_1^*(7) = H_1^*(4)H_1^*(6) = 0E_6, (H_1^*(5))^2 = E_6,$$

it follows that equality (21) holds for $l=1$. In view of (27) the equality (20) holds for $l=1,\ s\in[12,+\infty]\cap\mathbb{Z}$. Since

$$(H_2^*(0))^2 = 0E_8,$$

it follows that equality (20) holds for $l=2, s=0$. Since

$$H_2^*(0)H_2^*(2) = (H_2^*(1))^2 = 0E_8,$$

it follows that equality (20) holds for $l=2, s=2$. Since

$$H_2^*(0)H_2^*(4) = H_2^*(1)H_2^*(3) = (H_2^*(2))^2 = 0E_8,$$

it follows that equality (20) holds for $l=2, s=4$.

Since

$$H_2^*(0)H_2^*(6) = H_2^*(1)H_2^*(5) = H_2^*(2)H_2^*(4) = (H_2^*(3))^2 = 0E_8,$$

it follows that equality (20) holds for $l=2, s=6$. Since

$$H_2^*(0)H_2^*(8) = 0E_6,\ H_1^*(1)H_1^*(7) = 32(19(N_8)^6),$$

$$H_2^*(2)H_2^*(6) = (-360(N_8)^5)(-8N_8) = 32(90(N_8)^6),$$
$$H_2^*(3)H_2^*(5) = 192N_8)^4(32(N_8)^2) = 32(192(N_8)^6),$$
$$(H_2^*(4))^2 = 32(242(N_8)^3),$$

and $2\times(19+192) = 422 = 242+2\times 90$ it follows that equality (20) holds for $l=2, s=8$. Since

$$H_2^*(0)H_2^*(10) = H_2^*(1)H_1^*(9) = H_2^*(2)H_2^*(8) = 0E_6,$$

$$H_2^*(3)H_2^*(7) = 64(3(N_8)^4),\ H_2^*(4)H_2^*(6) =$$
$$(-88(N_8)^3)(-8N_8) = 64(11N_8^4)(H_2^*(5))^2 = (32(N_8)^2)^2 = 64(16N_8^4),$$

and $2\times 3+16 = 2\times 11$, it follows that equality (20) holds for $l=2, s=10$. Since

$$H_2^*(0)H_2^*(12) = H_2^*(1)H_2^*(11) = H_2^*(2)H_2^*(10) =$$
$$H_2^*(3)H_2^*(9) = H_2^*(4)H_1^*(8) = 0E_6,$$
$$2H_2^*(5)H_1^ast(7) = 64(N_8)^2,$$

it follows that equality (20) holds for $l = 2, s = 12$.

$$H_2^*(0)H_2^*(14) = H_2^*(1)H_2^*(13) = H_2^*(2)H_2^*(12) =$$

$$H_2^*(3)H_2^*(11) = H_2^*(4)H_1^*(10) = H_2^*(5)H_1^*(9) =$$

$$H_2^*(6)H_1^*(8) = 0E_6, (H_2^*(7))^2 = E_8,$$

it follows that equality (21) holds for $l = 2$. In view of (28) the equality (20) holds for $l = 2$, $s \in [16, +\infty] \cap \mathbb{Z}$. So, the equalities (20), (21) are fulfilled. Making use of (10), the results of the Part 2 of this paper (see also the section 3.3 below) and (39) – (46), we calculate the matrices $V_l^*(s)$, $R_l^*(s)$ for $l = 0$, 1, 2 and $s = 0, \dots 6 + 4l$ now. Clearly,

$$V_l^*(s) = 0 \text{ if } s \in [7 + 4l, +\infty) \cap \mathbb{Z}, \tag{48}$$

(i.e., if $s > 6 + 4l$, because then $(s - 1)/2 > 2 + 2l$.) We have

$$V_0^*(0) = \begin{pmatrix} 0 & 0 & 12 & 12 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix}, V_0^*(1) = \begin{pmatrix} 0 & -24 & -8 & 0 \\ 0 & 0 & -8 & -8 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix}.$$

$$V_0^*(2) = \begin{pmatrix} 12 & -20 & 0 & 0 \\ 0 & 16 & 4 & 0 \\ 0 & 0 & 4 & 4 \\ 0 & 0 & 0 & 0 \end{pmatrix}, V_0^*(3) = \begin{pmatrix} 16 & 0 & 0 & 0 \\ -8 & 16 & 0 & 0 \\ 0 & -8 & 0 & 0 \\ 8 & 0 & 0 & 0 \end{pmatrix},$$

$$V_0^*(4) = \begin{pmatrix} 0 & 0 & 0 & 0 \\ -12 & 0 & 0 & 0 \\ 4 & -12 & 0 & 0 \\ 0 & 0 & -4 & 0 \end{pmatrix}, V_0^*(5) = \begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 8 & 0 & 0 & 0 \\ 0 & 8 & 0 & 0 \end{pmatrix},$$

$$V_0^*(6) = \begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ -4 & 0 & 0 & 0 \end{pmatrix}.$$

$$V_1^*(0) = \begin{pmatrix} 0 & 0 & 0 & -102 & -204 & -102 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix},$$

$$V_1^*(1) = \begin{pmatrix} 0 & 0 & 306 & 372 & 66 & 0 \\ 0 & 0 & 0 & 66 & 132 & 66 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix},$$

$$V_1^*(2) = \begin{pmatrix} 0 & -306 & 108 & 268 & 0 & 0 \\ 0 & 0 & -198 & -236 & -380 & 0 \\ 0 & 0 & 0 & -38 & -76 & -38 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix},$$

$$V_1^*(3) = \begin{pmatrix} 102 & -516 & -180 & 0 & 0 & 0 \\ 0 & 198 & -84 & -180 & 0 & 0 \\ 0 & 0 & 114 & 132 & 18 & 0 \\ 0 & 0 & 0 & 18 & 36 & 18 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix},$$

$$V_1^*(4) = \begin{pmatrix} 240 & -198 & 0 & 0 & 0 & 0 \\ -66 & 348 & 108 & 0 & 0 & 0 \\ 0 & -114 & 60 & 108 & 0 & 0 \\ 0 & 0 & -54 & -60 & -6 & 0 \\ 0 & 0 & 0 & -6 & -12 & -6 \\ 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix},$$

$$V_1^*(5) = \begin{pmatrix} 146 & 0 & 0 & 0 & 0 & 0 \\ -160 & 146 & 0 & 0 & 0 & 0 \\ 38 & -212 & -52 & 0 & 0 & 0 \\ 0 & 54 & -36 & -52 & 0 & 0 \\ 0 & 0 & 18 & 20 & 2 & 0 \\ 0 & 0 & 0 & 2 & 4 & 2 \end{pmatrix},$$

$$V_1^*(6) = \begin{pmatrix} 0 & 0 & 0 & 0 & 0 & 0 \\ -102 & 0 & 0 & 0 & 0 & 0 \\ 96 & -102 & 0 & 0 & 0 & 0 \\ -18 & 108 & 12 & 0 & 0 & 0 \\ 0 & -18 & 12 & 12 & 0 & 0 \\ 0 & 0 & -6 & -12 & -6 & 0 \end{pmatrix},$$

$$V_1^*(7) = \begin{pmatrix} 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 66 & 0 & 0 & 0 & 0 & 0 \\ -48 & 66 & 0 & 0 & 0 & 0 \\ 6 & -36 & 12 & 0 & 0 & 0 \\ 0 & 6 & 12 & 12 & 0 & 0 \end{pmatrix},$$

$$V_1^*(8) = \begin{pmatrix} 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ -38 & 0 & 0 & 0 & 0 & 0 \\ 16 & -38 & 0 & 0 & 0 & 0 \\ -2 & -4 & -20 & 0 & 0 & 0 \end{pmatrix},$$

$$V_1^*(9) = \begin{pmatrix} 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 18 & 0 & 0 & 0 & 0 & 0 \\ 0 & 18 & 0 & 0 & 0 & 0 \end{pmatrix},$$

$$V_1^*(10) = \begin{pmatrix} 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ -6 & 0 & 0 & 0 & 0 & 0 \end{pmatrix},$$

$$V_2^*(0) = 8(119) \begin{pmatrix} 0 & 0 & 0 & 0 & 1 & 3 & 3 & 1 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix},$$

$$V_2^*(1) = 8(4) \begin{pmatrix} 0 & 0 & 0 & -119 & -257 & -157 & -19 & 0 \\ 0 & 0 & 0 & 0 & -19 & -57 & -57 & -19 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix},$$

$$V_2^*(2) = 8 \begin{pmatrix} 0 & 0 & 714 & 542 & -603 & -431 & 0 & 0 \\ 0 & 0 & 0 & 304 & 653 & 394 & 45 & 0 \\ 0 & 0 & 0 & 0 & 45 & 135 & 135 & 45 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix},$$

$$V_2^*(3) = 8(4) \begin{pmatrix} 0 & -119 & 243 & 388 & 70 & 0 & 0 & 0 \\ 0 & 0 & -114 & -83 & 101 & 70 & 0 & 0 \\ 0 & 0 & 0 & -45 & -96 & -57 & -6 & 0 \\ 0 & 0 & 0 & 0 & -6 & -18 & -18 & -6 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix},$$

$$V_2^*(4) = 8\begin{pmatrix} 119 & -1243 & -113 & 545 & 0 & 0 & 0 & 0 \\ 0 & 304 & -642 & -996 & -169 & 0 & 0 & 0 \\ 0 & 0 & 270 & 186 & -253 & -169 & 0 & 0 \\ 0 & 0 & 0 & 96 & 203 & 118 & 11 & 0 \\ 0 & 0 & 0 & 0 & 11 & 33 & 33 & 11 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix},$$

$$V_2^*(5) = 32\begin{pmatrix} 100 & -255 & -91 & 0 & 0 & 0 & 0 & 0 \\ -19 & 202 & 11 & -91 & 0 & 0 & 0 & 0 \\ 0 & -45 & 99 & 148 & 23 & 0 & 0 & 0 \\ 0 & 0 & -36 & -23 & 36 & 23 & 0 & 0 \\ 0 & 0 & 0 & -11 & -23 & -13 & -1 & 0 \\ 0 & 0 & 0 & 0 & -1 & -3 & -3 & -1 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix},$$

$$V_2^*(6) = 8\begin{pmatrix} 455 & -249 & 0 & 0 & 0 & 0 & 0 & 0 \\ -259 & 682 & 227 & 0 & 0 & 0 & 0 & 0 \\ 45 & -489 & -3 & 227 & 0 & 0 & 0 & 0 \\ 0 & 96 & -222 & -316 & -43 & 0 & 0 & 0 \\ 0 & 0 & 66 & 38 & -71 & -43 & 0 & 0 \\ 0 & 0 & 0 & 16 & 33 & 18 & 1 & 0 \\ 0 & 0 & 0 & 0 & 1 & 3 & 3 & 1 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix},$$

$$V_2^*(7) = \begin{pmatrix} 1408 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ -2400 & 1408 & 0 & 0 & 0 & 0 & 0 & 0 \\ 1248 & -3424 & -1024 & 0 & 0 & 0 & 0 & 0 \\ -192 & 2144 & -128 & -1024 & 0 & 0 & 0 & 0 \\ 0 & -352 & 864 & 1152 & 128 & 0 & 0 & 0 \\ 0 & 0 & -192 & -96 & 224 & 128 & 0 & 0 \\ 0 & 0 & 0 & -32 & -64 & -32 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix},$$

$$V_2^*(8) = \begin{pmatrix} 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ -952 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 1480 & -952 & 0 & 0 & 0 & 0 & 0 & 0 \\ -680 & 1968 & 488 & 0 & 0 & 0 & 0 & 0 \\ 88 & -1016 & 152 & 488 & 0 & 0 & 0 & 0 \\ 0 & 128 & -336 & -416 & -40 & 0 & 0 & 0 \\ 0 & 0 & 48 & 16 & -72 & -40 & 0 & 0 \\ 0 & 0 & 0 & 0 & -8 & -16 & -8 & 0 \end{pmatrix},$$

$$V_2^*(9) = \begin{pmatrix} 0 & 0 & 0 & 0 & 0 & 0 & 00 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 608 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ -832 & 608 & 0 & 0 & 0 & 0 & 0 & 0 \\ 320 & -992 & 160 & 0 & 0 & 0 & 0 & 0 \\ -32 & 384 & -96 & -160 & 0 & 0 & 0 & 0 \\ 0 & -32 & 96 & 128 & 32 & 0 & 0 & 0 \\ 0 & 0 & 0 & 32 & 64 & 32 & 0 & 0 \end{pmatrix},$$

$$V_2^*(10) = \begin{pmatrix} 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ -360 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 408 & -360 & 0 & 0 & 0 & 0 & 0 & 0 \\ -120 & 400 & -8 & 0 & 0 & 00 & 0 & 0 \\ 8 & -104 & 8 & -80 & 0 & 0 & 0 & \\ 0 & 0 & -48 & -96 & -56 & 0 & 0 & 0 \end{pmatrix},$$

$$V_2^*(11) = \begin{pmatrix} 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 192 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ -160 & 192 & 0 & 0 & 0 & 0 & 0 & 0 \\ 32 & -9664 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 32 & 64 & 64 & 0 & 0 & 0 & 0 \end{pmatrix},$$

$$V_2^*(12) = \begin{pmatrix} 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 40 & -88 & 0 & 0 & 0 & 0 & 0 & 0 \\ -8 & -16 & -56 & 0 & 0 & 0 & 0 & 0 \end{pmatrix},$$

$$V_2^*(13) = \begin{pmatrix} 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 32 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 32 & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix},$$

$$V_2^*(14) = \begin{pmatrix} 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ -8 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix},$$

Let

$$T_l^*(s) = \sum_{k=0}^{s} (-1)^{s-k} (H_l^*(k) V_l^*(s-k) + V_l^*(k) H_l^*(s-k)),$$

where $l = 0, 1, 2$ and $s \in [0, 12 + 8l \cap \mathbb{Z}$; let $t_{l,i,k}^*(s)$ and $v_{l,i,k}^*(s)$ stand respectively in the matrix $T_l^*(s)$ and $V_l^*(s)$ on the intersection of its i-th row and k-th column, where $i = 1, ..., 4+2l$ and $k = 1, ..., 4+2l$, and, moreover,

$$v^*(s)_{l,i,k} = 0, \text{ if } (i-1)(i-4+2l) > 0 \text{ or if } (k-1)(k-4+2l) > 0.$$

We must prove the equality

$$T_l^*(s) = 0 \tag{49}$$

for $l = 0, 1, 2$, $s =\in [0, 12 + 8l] \cap \mathbb{Z}$, if we want check the equalities (22). Let $\mathfrak{R}_n^{\vee}$ and $\mathfrak{R}_n^{\wedge}$ are the subrings in $Mat_n(\mathbb{C})$ consisting respectively of all the upper and lower triangle matrices of $Mat_n(\mathbb{C})$. Clearly,

$$V_l^*(\kappa) \in (N_{4+2l})^{3+2l-\kappa} Mat_{3+2l}(\mathbb{C}) \tag{50}$$

for $l = 0, 1, 2$, $\kappa = 0, ..., 3 + 2l$,

$$V_l^*(\kappa) \in Mat_{4+2l}(\mathbb{C})(N_{4+2l})^{2+l-\kappa} \tag{51}$$

for $l = 0, 1, 2$, $\kappa = 0, ..., 2 + l$,

$$v_{l,i,k}^*(\kappa) = 0 \tag{52}$$

for $l = 0, 1, 2$, $\kappa = 0, ..., 6 + 4l$, $\{i, k\} \subset [1, 4 + 2l] \cap \mathbb{Z}$, $k < 2 + l - \kappa + i$,

$$v_{l,i,k}^*(\kappa) = 0 \tag{53}$$

for $l = 0, 1, 2$, $\kappa = 0, ..., 6 + 4l$, $\{i, k\} \subset [1, 4 + 2l] \cap \mathbb{Z}$, $i + 3 + 2l - \kappa < k$, i.e.

$$v_{l,i,k}^*(6 + 4l - \kappa) = 0 \tag{54}$$

for $l = 0, 1, 2$, $\kappa = 0, ..., 6 + 4l$, $\{i, k\} \subset [1, 4 + 2l] \cap \mathbb{Z}$, $i - 3 - 2l + \kappa < k$; and, consequently,

$$v_{l,i,k}^*(3 + 2l + \kappa) = 0 \tag{55}$$

for $l = 0, 1, 2$, $\kappa = 0, ..., 3+2l$, $\{i, k\} \subset [1, 4+2l] \cap \mathbb{Z}$, $i - \kappa < k$, and therefore

$$V_l^*(\kappa) \in (N_{4+2l})^{2+l-\kappa}\mathfrak{R}_{4+2l}^{\vee}, \tag{56}$$

and

$$V_l^*(\kappa) \in \mathfrak{R}_{4+2l}(N_{4+2l})^{2+l-\kappa} \tag{57}$$

for $l = 0, 1, 2$, $\kappa = 0, ..., 2+l$. Let $N_n^{\wedge}$ be the matrix transposed to the matrix matrix N_n. Then

$$V_l^*(3+2l+\kappa) \in \mathfrak{R}_{4+2l}^{\wedge}(N_{4+2l}^{\wedge})^{3+2l-\kappa} \tag{58}$$

and

$$V_l^*(3+2l+\kappa) \in (N_{4+2l}^{\wedge})^{3+2l-\kappa}\mathfrak{R}_{4+2l}^{\wedge} \tag{59}$$

for $l = 0, 1, 2$, $\kappa = 0, ..., 3+2l$, In view of (47), (56) – (57),

$$T_l^*(s) = \tag{60}$$

$$\sum_{\kappa=0}^{s}(-1)^{s-\kappa}(H_l^*(\kappa)V_l^*(s-\kappa) + V_l^*(\kappa)H_l^*(s-\kappa)) \in (N_{4+2l})^{5+3l-s}\mathfrak{R}_{4+2l},$$

where $l = 0, 1, 2$, $k = 0, ..., 2+l$, $s = 0, ..., 2+l$. Therefore

$$T_l^*(s) = 0E_{4+2l}, \tag{61}$$

if $5 + 3l - s \geq 4 + 2l$ i.e $s \leq 1 + l$, and, consequently, (22) holds for $l = 0, 1, 2$, $s = 0, ...1 + l$. In view of (47),

$$T_l^*(s) = \tag{62}$$

$$= \left(\sum_{\kappa=0}^{s}(-1)^{s-\kappa}H_l^*(\kappa)V_l^*(s-\kappa)\right) +$$

$$\sum_{\kappa=0}^{s}(-1)^{s-\kappa}V_l^*(\kappa)H_l^*(s-\kappa) =$$

$$\left(\sum_{\kappa=0}^{s} h_l^*(\kappa)((-1)^{s-\kappa}(N_{4+2l})^{3+2l-\kappa}V_l^*(s-\kappa)\right) +$$

$$\sum_{\kappa=0}^{s}(-1)^{s-\kappa}h_l^*(s-\kappa)V_l^*(\kappa)(N_{4+2l})^{3+2l-s+\kappa} =$$

$$\left(\sum_{\kappa=0}^{s} h_l^*(\kappa)((-1)^{s-\kappa}(N_{4+2l})^{3+2l-\kappa}V_l^*(s-\kappa)\right) +$$

$$\sum_{k=0}^{s}(-1)^{k}h_l^*(k)V_l^*(s-k)(N_{4+2l})^{3+2l-k}$$

for $l = 0,\ 1,\ 2,\ s = \in [0, 12 + 8l] \cap \mathbb{Z}$. Let

$$T_l^{\vee}(s) = \sum_{\kappa=0}^{s} h_l^*(\kappa)((-1)^{s-\kappa}(N_{4+2l})^{3+2l-\kappa}V_l^*(s-\kappa), \tag{63}$$

$$T_l^{\wedge}(s) = \sum_{\kappa=0}^{s}(-1)^{\kappa}h_l^*(\kappa)V_l^*(s-\kappa)(N_{4+2l})^{3+2l-\kappa} \tag{64}$$

for $l = 0,\ 1,\ 2,\ s = 0,\ ...,\ 12 + 8l$, and let the values $t_{l,i,k}^{\vee}(s)$ and $t_{l,i,k}^{\wedge}(s)$ stand respectively in the matrices $T_l^{\vee}(s)$ and $T_l^{\wedge}(s)$ on the intersection of their i-th row and k-th column, where $i = 1,\ ...,\ 4 + 2l$ and $k = 1,\ ...,\ 4 + 2l$. Then

$$T_l^*(s) = T_l^{\vee}(s) + T_l^{\wedge}(s) \quad \text{for} \quad l = 0,\ 1,\ 2,\ s = 0,\ ...,\ 12 + 8l.$$

Clearly,

$$t_{l,i,k}^{\vee}(s) = \sum_{\kappa=0}^{s} h_l^*(\kappa)((-1)^{s-\kappa}v_{l,i-\kappa+3+2l,k}^*(s-\kappa) = \tag{65}$$

$$\sum_{\kappa=0}^{s} h_l^*(s-\kappa)((-1)^{\kappa}v_{l,i-s+\kappa+3+2l,k}^*(\kappa),$$

$$t_{l,i,k}^{\wedge}(s) = \sum_{\kappa=0}^{s}(-1)^{\kappa}h_l^*(\kappa)v_{i,k+\kappa-3-2l}^*l(s-\kappa), \tag{66}$$

where $l = 0,\ 1,\ 2,\ s = 0,\ ...,\ 12 + 8l,\ i = 1,\ ...,\ 4 + 2l,\ k = 1,\ ...,\ 4 + 2l$.

In view of (52),

$$v_{l,i-\kappa+3+2l,k}^*(s-\kappa) = 0, \quad \text{if} \quad k < 2+l-(s-\kappa)+(i-\kappa+3+2l) = 5+3l-s+i,$$

$$v_{i,k+\kappa-3-2l}^*(s-\kappa) = 0,$$

if $k + \kappa - 3 - 2l < 2 + l - (s - \kappa) + i$ i.e. if $k < 5 + 3l - s$. Therefore

$$t_{l,i,k}^*(s) = t_{l,i,k}^{\vee}(s) = t_{l,i,k}^{\wedge}(s) = 0 \tag{67}$$

for $l = 0,\ 1,\ 2,\ \kappa = 0,\ ...,\ 12 + 8l,\ \{i, k\} \subset [1,\ 4 + 2l] \cap \mathbb{Z},\ k < 5 + 3l - s + i,$

In view of (53),

$$v_{l,i-\kappa+3+2l,k}^*(s-\kappa) = 0, \quad \text{if} \quad (i-\kappa+3+2l)+3+2l-(s-\kappa) = i+6+4l-s < k,$$

$$v_{i,k+\kappa-3-2l}^*(s-\kappa) = 0,$$

if $i + 3 + 2l - (s - \kappa) < k + \kappa - 3 - 2l$ i.e. if $i + 6 + 4l - s < k$. Therefore

$$t_{l,i,k}^*(s) = t_{l,i,k}^{\vee}(s) = t_{l,i,k}^{\wedge}(s) = 0 \tag{68}$$

for $l = 0,\ 1,\ 2,\ \kappa = 0,\ ...,\ 12 + 8l,\ \{i, k\} \subset [1,\ 4 + 2l] \cap \mathbb{Z},\ i + 6 + 4l - s < k.$

In vief of (50) and (63),

$$T_l^{\vee}(s) \in N_{4+2l})^{6+4l-s}Mat_{4+2l}(\mathbb{C}). \tag{69}$$

Consequently, if $6+4l-s \geq 4+2l$, i.e. $s \leq 2+2l$, then $T_l^{\vee}(s) = 0E_{4+2l}$ for $s = 0, ..., 2+2l$ Therfore

$$(70) \qquad T_l^*(s) = T_l^{\wedge}(s) \sum_{\kappa=0}^{s} (-1)^{\kappa} h_l^*(\kappa) V_l^*(s-\kappa)(N_{4+2l})^{3+2l-\kappa} =$$

$$\sum_{\kappa=0}^{s} (-1)^{s-\kappa} h_l^*(s-\kappa) V_l^*(\kappa)(N_{4+2l})^{3+2l-s+\kappa}$$

for $l = 0,\ 1,\ 2,\ s \in [0, 2+2l] \cap \mathbb{Z}$.

We check the equality (49) now for $l = 0,\ 1,\ 2,\ s \in [0, 2+2l] \cap \mathbb{Z}$. In view of (60),

$$(71) \qquad t_{l,i,k}^*(s) = 0,$$

if

$$l = 0,\ 1, 2,\ s = 0,\ ...,\ 2+l,\ i \in [1, 4+2l] \cap \mathbb{Z},\ i \in [1, 4+2l] \cap \mathbb{Z},$$

$$k \in [1, 4+2l] \cap \mathbb{Z},\ k < 5+3l-s+i.$$

In view of (61), $T_0^*(s) = 0$ for $s = 0, 1$ Clearly,

$$T_0^*(2) = \sum_{\kappa=0}^{2} (-1)^{\kappa} h_0^*(2-\kappa) V_0^*(\kappa)((N_4)^{1+\kappa},$$

$t_{0,i,k}^*(2) = 0$, if $k < 3+i$,

$$t_{0,1,4}^{**}(2) = 12(h_0^{**}(2),$$

where

$$(72) \qquad t_{0,1,4}^{**}(2) = h_0^*(2) + 2h_0^*(1) + h_0^*(2) = -12+16-4 = 0,$$

In view of (61), $T_1^*(s) = 0$ for $s = 0,\ 1,\ 2$. In view of (70),

$$T_1^*(3) = -\sum_{\kappa=0}^{3} (-1)^{\kappa} h_1^*(3-\kappa) V_1^*(\kappa)(N_6)^{2+\kappa},$$

in view of (60),$t_{1,i,k}^*(3) = 0$, if $k - i < 5$. Moreover,

$$t_{1,1,6}^*(3) = 102 t_{1,1,6}^{**}(3),$$

where

$$(73) \qquad t_{1,1,6}^{**}(3) = h_1^*(3)) + 3h_1^*(2) + 3h_1^*(1) + h_1^*(0) =$$

$$-18 + 114 - 198 + 102 = 0.$$

In view of (70),

$$T_1^*(4) = \sum_{\kappa=0}^{4} (-1)^{\kappa} h_l^*(4-\kappa)(N_6)^{1+\kappa} V_2^*(\kappa),$$

and, in view of (67), $t^*_{1,i,k}(4) = 0$, if $k - i < 4$. Moreover,

$$t^*_{1,1,5}(4) = -102t^{**}_{1,1,5}(4),$$

where

(74)
$$t^{**}_{1,1,5}(4) = h^*(4) + 3h^*(3) +$$

$$3h^*(2) + h^*(1) = 6 - 54 + 114 - 66 = 0,$$

$$t^*_{1,1,6}(4) = -204h^*(4) - 372h^*(3) + 108h^*(2) + 516h^*(1) + 240h^*(0),$$

$$t^*_{1,1,6}(4) + 204t^{**}_{1,1,5}(4) =$$

$$240h^*(3) + 720h^*(2) + 720h^*(1) + +240h^*(0) = 240t^{**}_{1,1,6}(3) = 0,$$

$$t^*_{1,2,6}(4) = -66h^*(3) - 198h^*(2) - 198h^*(1) - 66h^*(0) =$$

$$-66t^{**}_{1,1,6}(3) = 0.$$

In view of (61), $T^*_2(s) = 0$ for $s = 0, 1, 2, 3$ In view of (70),

$$T^*_2(4) = \sum_{\kappa=0}^{4}(-1)^\kappa h^*_2(4-k)V^*_2(k)((N_8)^{3+k},$$

in view of (60),$t^*_{2,i,k}(4) = 0$, if $k - i < 7$,

$$t^*_{2,1,8}(4) = 8(119)t^{**}_{2,1,8}(4),$$

where

(75)
$$t^{**}_{2,1,8}(4) = h^*_2(4) + 4h^*_2(3) + 6h^*_2(2) + 4h^*_2(1) + h^*_2(0) =$$

$$8(119)8(-11 + 96 - 270 + 304 - 119) = 0.$$

Further we have

$$T^*_2(5) = -\sum_{k=0}^{5}(-1)^k h^*_l(5-k)((N_8)^{2+k}V^*_2(k),$$

and, in view of (67), $t^*_{2,i,k}(5) = 0$, if $k - i < 6$. Moreover,

(76)
$$t^*_{2,1,7}(5) = -8(119)t^{**}_{2,1,8}(5),$$

where

(77)
$$t^{**}_{2,1,7}(5) = h^*_2(5) + 4h^*_2(4) + 6h^*_2(3) + 4h^*_2(2) + h^*_2(1) =$$

$$8(4 - 44 + 144 - 180 + 76) = 0.$$

In view of (75,

(78)
$$t^*_{2,2,8}(5) = 8(4)(19)(h^*_2(4) + 4h^*_2(3) + 6(h^*_2(2) + 4(h^*_2(1) + (h^*_2(0)) =$$

$$8(4)(19)t^{**}_{2,1,8}(4) = 0,$$

$$t^*_{2,1,8}(5) = 8(3(119)h^*_2(5) + (4)(257)h^*_2(4) + 542h^*_2(3) +$$
$$(4)(-243)h^*_2(2) + (-1243)h^*_2(1)) - 400h^*_2(0)),$$

(79) $$t^*_{2,1,8}(5) - 8(3)(119)t^{**}_{2,1,7}(5) = -3200t^{**}_{2,1,8}(4) = 0E_8.$$

Clearly,

$$T^*_2(6) = \sum_{k=0}^{6}(-1)^k h^*_l(k)((N_8)^{1+k}V^*_2(6-k),$$

and, in view of (67), $t^*_{2,i,k}(6) = 0$, if $k - i < 5$. Moreover,

(80) $$t^*_{2,1,6}(6) = 8(119)(h^*_2(6) + 4h^*_2(5) + 6h^*_2(4) +$$
$$4h^*_2(3) + h^*_2(2)) = 952t^{**}_{2,1,6}(6),$$

where

(81) $$t^{**}_{2,1,6}(6) = h^*_2(6) + 4h^*_2(5) + 6h^*_2(4) + 4h^*_2(3) + h^*_2(2) =$$
$$8(-1 + 16 - 66 + 96 - 45) = 0,$$

(82) $$t^*_{2,2,7}(6) = 8(4)(19)(h^*_2(5) + 4h^*_2(4) + 6h^*_2(3) + 4h^*_2(3) +$$
$$h^*_2(2)) = 8(4)(19)t^{**}_{2,1,7}(5) = 0E_8,$$

(83) $$t^*_{2,3,8}(6) =$$
$$8(45)(h^*_2(4) + 4h^*_2(3) + 6h^*_2(2) + 4h^*_2(1) + h^*_2(0)) = 360t^{**}_{2,1,8}(4) = 0E_8,$$

$$t^*_{2,1,7}(6) = 8(3(119)h^*_2(6) + (4)(257)h^*_2(5) + 542h^*_2(4) +$$
$$(4)(-243)h^*_2(3) + (-1243)h^*_2(2)) - 400h^*_2(1)),$$

(84) $$t^*_{2,1,7}(6) - 8(3)(119)t^{**}_{2,1,6}(6) =$$
$$8(-400h^*_2(5) - 4(400)h^*_2(4) - 6(400)h^*_2(3) - 4(400)h^*_2(1) - 400h^*(1)) =$$
$$-3200t^{**}_{2,1,7}(5) = 0E_8,$$

$$t^*_{2,2,8}(6) = 8(228h^*_2(5) + 653h^*_2(4) + 332h^*_2(3) -$$
$$642h^*_2(2) - 808h^*_2(1) - 259h^*_2(0))$$

$$228t^{**}_{2,1,7}(5) = 228h^*_2(5) + 912h^*_2(4) + 1368h^*_2(3) + 912h^*_2(2) + 228h^*_2(1)$$

(85) $$t^*_{2,2,8}(6) - 8(228)t^{**}_{2,1,7}(5) =$$

$$-259h_2^*(4) - 1036h_2^*(3) - 1554h_2^*(2) -$$
$$1036h_2^*(1) - 259h_2^*(0) = -259t^{**}_{2,1,8}(4) = 0.$$

Let $s = 3 + 2l + r$, where $r = 0, ..., 9 + 6l$. Then, in view of (69),

$$t^{\vee}_{l,i,k}(3 + 2l + r) = 0 \tag{86}$$

for $l = 0, 1, 2$, $i = 2 + r, ..., 4 + 2l$; $k = 1, ..., 4 + 2l$, and, in view of (65),

$$t^{\vee}_{l,i,k}(3 + 2l + r) = \tag{87}$$

$$\sum_{\kappa=0}^{3+2l+r} h_l^*(3 + 2l + r - \kappa)((-1)^{\kappa} v^*_{l,i-r+\kappa,k}(\kappa) =$$

$$\sum_{\kappa=r}^{3+2l+r} h_l^*(3 + 2l + r - \kappa)((-1)^{\kappa} v^*_{l,i-r+\kappa,k}(\kappa) =$$

$$\sum_{\kappa=0}^{3+2l} h_l^*(3 + 2l - \kappa)((-1)^{\kappa+r} v^*_{l,i+\kappa,k}(\kappa + r) =$$

$$\sum_{\kappa=r}^{3+2l+r} h_l^*(3 + 2l + r - \kappa)((-1)^{\kappa} v^*_{l,i-r+\kappa,k}(\kappa) =$$

$$\sum_{\kappa=0}^{3+2l} h_l^*(3 + 2l - \kappa)((-1)^{\kappa+r} v^*_{l,i+\kappa,k}(\kappa + r) =$$

$$\sum_{\kappa=0}^{3+2l+1-i} h_l^*(3 + 2l - \kappa)((-1)^{\kappa+r} v^*_{l,i+\kappa,k}(\kappa + r),$$

where $l = 0, 1, 2$, $r = 0, ..., 9 + 6l$, $i = 1, ..., 4 + 2l$, $k = 1, ..., 4 + 2l$.

In view of (52),

$$t^{\vee}_{l,i,k}(3 + 2l + r) = 0, \tag{88}$$

where

$$l = 0, 1, 2,\ r = 0, ..., 9 + 6l,\ \kappa = 0, ..., 12 + 8l,\ \{i, k\} \subset [1, 4 + 2l] \cap \mathbb{Z},$$

$$k < 2 + l + (i + \kappa) - (\kappa + r) = 2 + l + i - r.$$

In view of (66),

$$t^{\wedge}_{l,i,k}(3 + 2l + r) = \tag{89}$$

$$\sum_{\kappa=0}^{3+2l+r} (-1)^{\kappa} h_l^*(\kappa) v^*_{l,i,k+\kappa-3-2l}(3 + 2l + r - \kappa) =$$

$$\sum_{\kappa=0}^{3+2l} (-1)^{\kappa} h_l^*(\kappa) v^*_{l,i,k+\kappa-3-2l}(3 + 2l + r - \kappa) =$$

$$-\sum_{\kappa=0}^{3+2l} (-1)^{\kappa} h_l^*(3 + 2l - \kappa) v^*_{l,i,k-\kappa}(r + \kappa),$$

where $l = 0,\ 1,\ 2,\ r = 0,\ ...,\ 9 + 6l,\ i = 1,\ ...,\ 4 + 2l,\ k = 1,\ ...,\ 4 + 2l.$

In view of (52),

$$t^{\wedge}_{l,i,k}(3 + 2l + r) = 0, \tag{90}$$

where

$$l = 0,\ 1,\ 2,\ r = 0,\ ...9 + 6l,\ \{i, k\} \subset [1,\ 4 + 2l] \cap \mathbb{Z},$$
$$(k - \kappa) < 2 + l + i - (\kappa + r).$$

In view of (88) and (90),

$$t^{*}_{l,i,k}(3 + 2l + r) = 0, \tag{91}$$

for $l = 0,\ 1,\ 2,\ r = 0,\ ...,\ 9 + 6l,\ \{i, k\} \subset [1,\ 4 + 2l] \cap \mathbb{Z},\ k < 2 + l + i - r$. In view of (87) and (53),

$$t^{\vee}_{l,i,k}(3 + 2l + r) = 0 \tag{92}$$

for

$$l = 0,\ 1,\ 2,\ r = 0,\ ...,\ 9 + 6l,\ i = 1,\ ...,\ 4 + 2l,\ k = 1,\ ...,\ 4 + 2l,$$

$$(i + \kappa) + (3 + 2l) - (\kappa + r) = i + 3 + 2l - r < k.$$

In view of (89) and (53),

$$t^{\wedge}_{l,i,k}(3 + 2l + r) = 0 \tag{93}$$

for $l = 0,\ 1,\ 2,\ r = 0,\ ...9 + 6l,\ i = 1,\ ...,\ 4 + 2l,\ k = 1,\ ...,\ 4 + 2l, i + 3 + 2l - (r + \kappa) < k - \kappa$. In view of (92) and (93),

$$t^{*}_{l,i,k}(3 + 2l + r) = 0, \tag{94}$$

for $l = 0,\ 1,\ 2,\ r = 0,\ ...,\ 9 + 6l,\ \{i, k\} \subset [1,\ 4 + 2l] \cap \mathbb{Z},\ i + 3 + 2l - r < k$. In view of (91),

$$t^{*}_{0,i,k}(3) = 0,\ \text{ if } i = 3,\ 4,\ ,$$
$$t^{*}_{0,1,k}(3) = 0,\ \text{ if } k = 1,\ 2,$$
$$t^{*}_{0,2,k}(3) = 0,\ \text{ if } k = 1,\ 2,\ 3,$$

In view of (86), (87),

$$t^{\vee}_{0,1,3}(3) = 12h^{*}_{0}(3) + 8h^{*}_{0}(2) + 4h^{*}_{0}(1),$$

$$t^{\vee}_{0,1,4}(3) = 12h^{*}_{0}(3) + 8h^{*}_{0}(2) + 4h^{*}_{0}(1) = t^{\vee}_{0,1,3}(3),\ t^{\vee}_{0,2,4}(3) = 0,$$

in view of (89),

$$t^{\wedge}_{0,1,3}(3) = -12h^{*}_{0}(3) - 24h^{*}_{0}(2) - 12h^{*}_{0}(1),$$

$$t^{\wedge}_{0,1,4}(3) = -12h^{*}_{0}(3) - 8h^{*}_{0}(2) + 20h^{*}_{0}(1) + 16h^{*}_{0}(0),$$
$$t^{\wedge}_{0,2,4}(3) = -8h^{*}_{0}(2) - 16h^{*}_{0}(1) + 8h^{*}_{0}(0).$$

Therefore

$$t^{*}_{0,1,3}(3) = -8t^{**}_{0,1,3}(3),$$
$$t^{*}_{0,1,4}(3) = 8t^{**}_{0,1,4}(3),$$
$$t^{*}_{0,2,4}(3) = -8t^{**}_{0,2,4}(3),$$

where

(95) $$t^{**}_{0,1,3}(3) = 2h^{*}_{0}(2) + h^{*}_{0}(1) = -8 + 8 = 0,\ t^{**}_{0,1,4}(3) =$$
$$3h^{*}_{0}(1) + 2h^{*}_{0}(0) = 24 - 24 = 0,\ t^{**}_{0,2,4}(3) =$$
$$h^{*}_{0}(2) + 2h^{*}_{0}(1) + h^{*}_{0}(0) = -12 + 16 - 4 = 0$$

In view of (91),(94),(86),(89),

$$t^{*}_{0,i,k}(4) = 0,\ \text{if } i = 4,$$
$$t^{*}_{0,1,k}(4) = 0,\ \text{for } k = 1,\ 4,$$
$$t^{*}_{0,2,k}(4) = 0,\ \text{for } k = 1,\ 2,$$
$$t^{*}_{0,3,k}(4) = 0,\ \text{for } k = 1,\ 2,\ 3,$$
$$t^{\vee}_{0,i,k}(4) = 0$$

for $i = 3,\ ...,\ 4; k = 1,\ ...,\ 4,$

$$t^{\vee}_{0,1,2}(4) = 24h^{*}_{0}(3) + 16h^{*}_{0}(2) + 8h^{*}_{0}(1)$$
$$t^{\wedge}_{0,1,2}(4) = 24h^{*}_{0}(3) + 12h^{*}_{0}(2)$$
$$t^{*}_{0,1,2}(4) = 48h^{*}_{0}(3) + 28h^{*}_{0}(2) + 8h^{*}_{0}(1) =$$
$$4(12h^{*}_{0}(3) + 7h^{*}_{0}(2) + 2h^{*}_{0}(1)) = 4(12 - 28 + 16) = 0,$$
$$t^{\vee}_{0,1,3}(4) = 8h^{*}_{0}(3) + 4h^{*}_{0}(2) - 4h^{*}_{0}(0)$$
$$t^{\wedge}_{0,1,3}(4) = 8h^{*}_{0}(3) - 20h^{*}_{0}(2) - 16h^{*}_{0}(1)$$
$$t^{\vee}_{0,1,3}(4) = 16h^{*}_{0}(3) - 16h^{*}_{0}(2) - 16h^{*}_{0}(1) - 4h^{*}_{0}(0) =$$
$$4(12 - 32 + 16 + 4) = 0,$$
$$t^{\vee}_{0,2,3}(4) = 8h^{*}_{0}(3) + 4h^{*}_{0}(2)),$$
$$t^{\wedge}_{0,2,3}(4) = 8h^{*}_{0}(3) + 16h^{*}_{0}(2) + 8h^{*}_{0}(1),$$
$$t^{*}_{0,2,3}(4) = 16h^{*}_{0}(3) + 20h^{*}_{0}(2) + 8h^{*}_{0}(1) - 4h^{*}_{0}(0) =$$
$$4(4 - 20 + 16) = 0,$$
$$t^{\vee}_{0,2,4}(4) = 8h^{*}_{0}(3) + 4h^{*}_{0}(2),$$
$$t^{\wedge}_{0,2,4}(4) = 8h^{*}_{0}(3) + 4h^{*}_{0}(2) - 16h^{*}_{0}(1) - 12h^{*}_{0}(0),$$
$$t^{*}_{0,2,4}(4) = 16h^{*}_{0}(3) + 8h^{*}_{0}(2) - 16h^{*}_{0}(1) - 12h^{*}_{0}(0) =$$
$$4(4 - 8 - 32 + 36) = 0,$$
$$t^{*}_{0,3,4}(4) = t^{\wedge}_{0,3,4}(4) =$$
$$4h^{*}_{0}(2) + 8h^{*}_{0}(1) + 4h^{*}_{0}(0) = 4(-4 + 16 - 12) = 0,$$

In view of (91),(94),(86),(89),

$$t^*_{0,1,k}(5) = 0, \text{ for } k = 3,\ 4,$$

$$t^*_{0,2,k}(5) = 0, \text{ for } k = 1,\ 4,$$

$$t^*_{0,3,k}(5) = 0, \text{ for } k = 1,\ 2,$$

$$t^*_{0,4,k}(5) = 0, \text{ for } k = 1,\ 2, 3$$

$$t^{\vee}_{0,i,k}(4) = 0$$

for $i = 4; k = 1, ..., 4,$

$$t^{\vee}_{0,1,1}(5) = 12h^*_0(3) + 8h^*_0(2) + 4h^*_0(1),$$

$$t^{\wedge}_{0,1,1}(5) = -12h^*_0(3),$$

$$t^*_{0,1,1}(5) = 8h^*_0(2) + 4h^*_0(1) = -32 + 32 = 0,$$

$$t^{\vee}_{0,1,2}(5) = -20h^*_0(3) - 16h^*_0(2) - 12h^*_0(1) - 8h^*_0(0),$$

$$t^{\wedge}_{0,1,2}(5) = 20h^*_0(3) + 16h^*_0(2),$$

$$t^*_{0,1,2}(5) = -12h^*_0(1) - 8h^*_0(0) - 96 + 96 = 0,$$

$$t^{\vee}_{0,2,2}(5) = 16h^*_0(3) + 8h^*_0(2),$$

$$t^{\wedge}_{0,2,2}(5) = -16h^*_0(3) - 8h^*_0(2),$$

$$t^*_{0,2,2}(5) = 0,$$

$$t^{\vee}_{0,2,3}(5) = 4h^*_0(3) - 4h^*_0(1),$$

$$t^{\wedge}_{0,2,3}(5) = -4h^*_0(3) + 16h^*_0(2) + 12h^*_0(1),$$

$$t^*_{0,2,3}(5) = 16h^*_0(2) + 8h^*_0(1) - 64 + 64 = 0,$$

$$t^{\vee}_{0,3,3}(5) = 4h^*_0(3),$$

$$t^{\wedge}_{0,3,3}(5) = -4h^*_0(3) - 8h^*_0(2) - 4h^*_0(1),$$

$$t^*_{0,3,3}(5) = -8h^*_0(2) - 4h^*_0(1) = 32 - 32 = 0,$$

$$t^{\vee}_{0,3,4}(5) = 4h^*_0(3),$$

$$t^{\wedge}_{0,3,4}(5) = -4h^*_0(3) + 12h^*_0(1) + 8h^*_0(0)$$

$$t^*_{0,3,4}(5) = 12h^*_0(1) + 8h^*_0(0) = 96 - 96 = 0,$$

In view of (91),(94),(86),(89),

$$t^*_{0,1,k}(6) = 0, \text{ for } k = 2,\ 3,\ 4,$$

$$t^*_{0,2,k}(6) = 0, \text{ for } k = 3,\ 4,$$

$$t^*_{0,3,k}(6) = 0, \text{ for } k = 1,\ 4,$$

$$t^*_{0,4,k}(6) = 0, \text{ for } k = 1,\ 2,$$

$$t^{\vee}_{0,1,1}(6) = -16h^*_0(3) - 12h^*_0(2) - 8h^*_0(1) -$$

$$4h^*_0(0),$$

$$t^{\wedge}_{0,1,1}(6) = -16h^*_0(3)$$

$$t^*_{0,1,1}(6) = -32h^*_0(3) - 12h^*_0(2) - 8h^*_0(1) -$$
$$4h^*_0(0) = -4(8 - 12 + 16 - 12) = 0,$$
$$t^\vee_{0,2,1}(6) = 8h^*_0(3) + 4h^*_0(2),$$
$$t^\wedge_{0,2,1}(6) = 8h^*_0(3)$$
$$t^*_{0,2,1}(6) = 16h^*_0(3) + 4h^*_0(2) = 16 - 16 = 0,$$
$$t^\vee_{0,2,2}(6) = -16h^*_0(3) - 12h^*_0(2) - 8h^*_0(1),$$
$$t^\wedge_{0,2,2}(6) = -16h^*_0(3) - 4h^*_0(2)$$
$$t^*_{0,2,2}(6) = -32h^*_0(3) - 16h^*_0(2) - 8h^*_0(1) =$$
$$-8(4 - 16,$$
$$t^\vee_{0,2,2}(6) = -16h^*_0(3) - 12h^*_0(2) - 8h^*_0(1),$$
$$t^\wedge_{0,2,2}(6) = -16h^*_0(3) - 12h^*_0(2)$$
$$t^*_{0,2,2}(6) = -32h^*_0(3) - 24h^*_0(2) - 8h^*_0(1) =$$
$$-8(4 - 12 + 8) = 0,$$
$$t^\vee_{0,3,2}(6) = 8h^*_0(3),$$
$$t^\wedge_{0,3,2}(6) = 8h^*_0(3) + 4h^*_0(2)$$
$$t^*_{0,3,2}(6) = 16h^*_0(3) + 4h^*_0(2) = 16 - 16,$$
$$t^\vee_{0,3,3}(6) = -4h^*_0(2),$$
$$t^\wedge_{0,3,3}(6) = -12h^*_0(2) - 8h^*_0(1)$$
$$t^*_{0,3,3}(6) = -16h^*_0(2) - 8h^*_0(1) = 64 - 64 = 0,$$
$$t^\vee_{0,4,3}(6) = 0,$$
$$t^\wedge_{0,4,3}(6) = 0$$
$$t^*_{0,4,3}(6) = 0,$$
$$t^\vee_{0,4,4}(6) = 0,$$
$$t^\wedge_{0,4,4}(6) = -4h^*_0(2) - 8h^*_0(1) - 4h^*_0(0)$$
$$t^*_{0,4,4}(6) = -4h^*_0(2) - 8h^*_0(1) - 4h^*_0(0) =$$
$$16 - 64 + 48 = 0.$$

In view of (91),
$$t^*_{1,i,k}(5) = 0, \text{ if } i = 4,\ 5,\ 6$$
$$t^*_{1,1,k}(5) = 0, \text{ if } k = 1,\ 2,\ 3$$
$$t^*_{1,2,k}(5) = 0, \text{ if } k = 1,\ 2,\ 3,\ 4,$$
$$t^*_{1,3,k}(5) = 0, \text{ if } k = 1,\ 2,\ 3,\ 4,\ 5.$$

In view of (86), (87),

$$t^\vee_{1,1,4}(5) = -102h^*_1(5) - 66h^*_1(4) - 38h^*_1(3) - 18h^*_1(2) - 6h^*_1(1) - 2h^*_1(0),$$
$$t^\vee_{1,1,5}(5) = -204h^*_1(5) - 132h^*_1(4) - 76h^*_1(3) -$$

$$36h_1^*(2) - 12h_1^*(1) - 4h_1^*(0) = 2t^{\vee}_{1,1,4}(5),$$
$$t^{\vee}_{1,1,6}(5) = -102h_1^*(5) - 66h_1^*(4) - 38h_1^*(3) -$$
$$18h_1^*(2) - 6h_1^*(1) - 2h_1^*(0) = t^{\vee}_{1,1,4}(5),$$
$$t^{\vee}_{1,2,5}(5) = t^{\vee}_{1,2,6}(5) = t^{\vee}_{1,3,6}(5) = 0.$$

In view of (89),

$$t^{\wedge}_{1,1,4}(5) = 102h_1^*(5) + 306h_1^*(4) + 306h_1^*(3) + 102h_0^*(2),$$
$$t^{\wedge}_{1,1,5}(5) = 204h_0^*(5) + 372h_0^*(4) - 108h_0^*(3) -$$
$$516h_0^*(2) - 240h_0^*(1),$$
$$t^{\wedge}_{1,1,5}(5) - 2t^{\wedge}_{1,1,4}(5) = -240h_0^*(4) - 720h_0^*(3) - 7202h_0^*(2) - 240h_0^*(1),$$
$$t^{\wedge}_{0,1,6}(5) = 102h_1^*(5) + 66h_1^*(4) - 268h_1^*(3) - 180h_1^*(2) +$$
$$198h_1^*(1) + 146h_1^*(0),$$
$$t^{\wedge}_{1,1,6}(5) - t^{\wedge}_{1,1,4}(5) = -240h_1^*(4) - 574h_0^*(3) - 282h_0^*(2) + 198h_1^*(1) + 146h_1^*(0).$$

Therefore

$$t^*_{1,1,4}(5) = 240h_1^*(4) + 268h_1^*(3) + 84h_0^*(2) -$$
$$6h_1^*(1) - 2h_1^*(0),$$

and, in view of (74), (73),

$$t^*_{1,1,4}(5) - 240t^{**}_{1,1,5}(4) = -452h_1^*(3) - 636h_1^*(2) - 246h^*(1) - 2h_1^*(0),$$
$$t^*_{1,1,4}(5) - 240t^{**}_{1,1,5}(4) + 452t^{**}_{1,1,6}(3) = 720h^*(2) + 1110h^*(1) + 450h^*(0) =$$
$$30(24h_1^*(2) + 37h_1^*(1) + 15h_1^*(0)) = 30t^{**}_{1,1,4}(5),$$

where

(96) $$t^{**}_{1,1,4}(5) = 24h_1^*(2) + 37h_1^*(1) + 15h_1^*(0) =$$
$$24(38) - 37(66) + 15(102)) = 6(4(38) - 37(11) + 15(17) =$$
$$6(152 - 407 + 255) = 0.$$

In view of (74),

$$t^*_{1,1,5}(5) = 2t^*_{1,1,4}(5) - 240t^{**}_{1,1,5}(4) = 0.$$

Further we have

$$t^*_{1,1,6}(5) = t^*_{1,1,4}(5) - 240h_1^*(4) - 574h_1^*(3) - 282h_1^*(2) + 198h_1^*(1) + 146h_1^*(0).$$

In view of (74) and (73),

$$t^*_{1,1,6}(5) + 240t^{**}_{1,1,5}(4) = t^*_{1,1,4}(5) =$$
$$146h_1^*(3) + 438h_1^*(2) + 438h_1^*(1) + 146h_1^*(0) == 146t^{**}_{1,1,6}(3) = 0.$$

We have further

$$t^*_{1,2,5}(5) = t^{\wedge}_{1,2,5}(5) =$$

$$66h_1^*(4)+198h_1^*(3)+198h_1^*(2)+66h_1^*(1)=66t_{1,1,5}^{**}(4)=0,$$

$$t_{1,2,6}^*(5)=t_{1,2,6}^{\wedge}(5)=$$

$$132h_1^*(4)+236h_1^*(3)-84h_1^*(2)-348h_1^*(1)-160h_1^*(0)=$$

$$2t_{1,2,5}^*(5)-160h_1^*(3)-480h_1^*(2)-480h_1^*(1)-160h_1^*(0)=$$

$$2t_{1,2,5}^*(5)-160t_{1,1,6}^{**}(3)=0,$$

$$t_{1,3,6}^*(5)=t_{1,3,6}^{\wedge}(5)=38h_1^*(3)+114h_1^*(2)+114h_1^*(1)+38h_1^*(0)=38t_{1,1,6}^{**}(3)=0$$

In view of (91),

$$t_{2,i,k}^*(7)=0,\ \text{if } i=5,\ 6,\ 7,\ 8,$$

$$t_{2,1,k}^*(7)=0,\ \text{for } k=1,\ 2,\ 3,\ 4,$$

$$t_{2,2,k}^*(7)=0,\ \text{for } k=1,\ 2,\ 3,\ 4,\ 5,$$

$$t_{2,3,k}^*(7)=0,\ \text{for } k=1,\ 2,\ 3,\ 4,\ 5,\ 6,$$

$$t_{2,4,k}^*(7)=0,\ \text{for } k=1,\ 2,\ 3,\ 4,\ 5,\ 6,\ 7.$$

In view of (86), (87),

$$t_{2,1,5}^{\vee}(7)=t_{2,1,8}^{\vee}(7)=8(119)h_2^*(7)+$$

$$8(4)(19)h_2^*(6)+8(45)h_2^*(5)+8(4)6h_2^*(4)+$$

$$8(11)h_2^*(3)+32h_2^*(2)+8h_2^*(1),$$

$$t_{2,1,6}^{\vee}(7)=t_{2,1,7}^{\vee}(7)=8(119)3h_2^*(7)+8(4)57h_2^*(6)+$$

$$8(135)h_2^*(5)+8(4)18h_2^*(4)+8(33)h_2^*(3)+$$

$$32(3)h_2^*(2)+8(3)h_2^*(1)=3t_{2,1,5}^{\vee}(7),$$

$t_{2,i,k}^{\vee}(8)=0$, if $i=3$, ..., 8, $k=1$, ..., 8. In view of (89),

$$t_{2,1,5}^{\wedge}(7)=$$

$$8(119)h_2^*(7)-8(4)119h_2^*(6)-8(714)h_2^*(5)-8(4)(-119)h_2^*(4)-8(119)h_2^*(3)=$$

$$-8(119)(h_2^*(7)+4h_2^*(6)+6h_2^*(5)+4h_2^*(4)+h_2^*(3))=$$

$$-8(119)(h_2^*(7)+t_{1,1,5}^{\wedge\wedge}(7)=-8(119)h_2^*(7),$$

where

(97)
$$t_{2,1,5}^{\wedge\wedge}(7)=4h_2^*(6)+6h_2^*(5)+4h_2^*(4)+h_2^*(3)=-32+192-352+192=0.$$

In view of (97) and (81),

(98) $$t_{2,1,6}^{\wedge\wedge}(7):=10h_2^*(5)+20h_2^*(4)+15h_2^*(3)+4h_2^*(2))=$$

$$4t_{2,1,6}^{**}(6)-t_{2,1,5}^{\wedge\wedge}(7)=0,$$

$$t_{2,1,6}^{\wedge}(7)=-8(119)(3)h_2^*(7)-8(4)257h_2^*(6)-8(542)h_2^*(5)+$$

$$8(4)243h_2^*(4)+8(1243)h_2^*(3)+32(100)h_2^*(2)=$$

$$t_{2,1,6}^{\wedge}(7)+8(257)t_{2,1,5}^{\wedge\wedge}(7)=-8(119)(3)h_2^*(7)+$$

$$8(1000)h_2^*(5)+8(4)(500)h_2^*(4)+8(1500)h_2^*(3)+8(400)h_2^*(2)=$$

$$-8(119)(3)h_2^*(7)+$$
$$8(100)(10h_2^*(5)+20h_2^*(4)+15h_2^*(3)+4h_2^*(2))=$$
$$-8(119)(3)h_2^*(7)+800t_{2,1,6}^{\wedge\wedge}(7)=-8(119)(3)h_2^*(7)=3t_{2,1,5}^{\wedge}(7),$$
$$t_{2,1,7}^{\wedge}(7)=-8(119)3h_2^*(7)-8(4)(157)h_2^*(6)+8(603)h_2^*(5)+$$
$$8(4)(388)h_2^*(4)+8(113)h_2^*(3)-32(255)h_2^*(2)-8(455)h_2^*(1)=$$
$$t_{2,1,7}^{\wedge}(7)+8(157)t_{2,1,5}^{\wedge\wedge}(7)=$$
$$-8(119)3h_2^*(7)+8(1545)h_2^*(5)+8(4)(545)h_2^*(4)+$$
$$8(270)h_2^*(3)-8(1020)h_2^*(2)-8(455)h_2^*(1)=$$
$$-8(119)3h_2^*(7)+8(1545)h_2^*(5)+8(4)(545)h_2^*(4)+$$
$$8(270)h_2^*(3)-8(1020)h_2^*(2)-8(455)h_2^*(1)+$$
$$8(455)t_{2,1,7}^{**}(5)=-8(119)3h_2^*(7)+8(2000)h_2^*(5)+$$
$$8(4)(1000)h_2^*(4)+8(3000)h_2^*(3)+8(800)h_2^*(2)=$$
$$-8(119)3h_2^*(7)+8(200)(10h_2^*(5)+20h_2^*(4)+15h_2^*(3)+4h_2^*(2))=$$
$$-8(119)3h_2^*(7)+1600t_{2,1,6}^{\wedge\wedge}(7)=-8(119)3h_2^*(7)=$$
$$3t_{2,1,5}^{\wedge}(7),$$

$$t_{2,1,8}^{\wedge}(7)=-8(119)h_2^*(7)-8(4)(19)h_2^*(6)+$$
$$8(431)h_2^*(5)+8(4)70h_2^*(4)-8(545)h_2^*(3)-$$
$$32(91)h_2^*(2)+8(249)h_2^*(1)+8(176)h_2^*(0)-$$
$$8(176)t_{2,1,8}^{**}(4)=-8(119)h_2^*(7)-$$
$$8(455)h_2^*(1)-8(1420)h_2^*(2)-$$
$$8(1249)h_2^*(3)+8(104)h_2^*(4)+8(431)h_2^*(5)-8(76)h_2^*(6)+$$
$$8(455)t_{2,1,7}^{**}(5)=-8(119)h_2^*(7)+$$
$$8(400)h_2^*(2)+8(1481)h_2^*(3)+8(1924)h_2^*(4)+$$
$$8(886)h_2^*(5)-8(76)h_2^*(6)-8(400)t_{2,1,6}^{**}(6)=$$
$$-8(119)h_2^*(7)-$$
$$8(119h_2^*(3)+476h_2^*(4)+714h_2^*(5)+476h_2^*(6))=$$
$$-8(119)h_2^*(7)-$$
$$8(119)(h_2^*(3)+4h_2^*(4)+6h_2^*(5)+4_2^*(6))=$$
$$-8(119)h_2^*(7)-$$
$$-8(119)h_2^*(7)-8(119)t_{2,1,5}^{\wedge\wedge}(7)=$$
$$-8(119)h_2^*(7)=t_{2,1,5}^{\wedge}(7).$$

In view of (81),

$$t_{2,2,6}^{\wedge}(7)=8(119)0*h_2^*(7)-8(4)19h_2^*(6)-8(304)h_2^*(5)-$$

$$8(4)114h_2^*(4) - 8(304)h_2^*(3) - 32(19)h_2^*(2) =$$
$$-32(19)(h_2^*(6) + 4h_2^*(5) + 6h_2^*(4) + 4h_2^*(3) + h_2^*(2)) =$$
$$-32(19)t_{2,1,6}^{**}(6) = 0.$$

In view of (refeq:3ia),

$$t_{2,2,7}^{\wedge}(7) = 8(119)0 * h_2^*(7) - 8(4)57h_2^*(6) - 8(653)h_2^*(5) -$$
$$8(4)83h_2^*(4) + 8(642)h_2^*(3) + 32(202)h_2^*(2) +$$
$$8(259)h_2^*(1) - 3t_{2,2,6}^{\wedge}(7) =$$
$$8(912 - 653)h_2^*(5) + 8(4)(342 - 83)h_2^*(4) + 8(912 + 642)h_2^*(3) +$$
$$32(259)h_2^*(2) + 8(259)h_2^*(1) = 8(259)t_{2,1,7}^{**}(5) = 0.$$

In view of (75), (77), (81) and (97),

$$t_{2,2,8}^{\wedge}(7) = 8(119)0h_2^*(7) - 8(4)57h_2^*(6) -$$
$$8(394)h_2^*(5) + 8(4)101h_2^*(4) + 8(996)h_2^*(3) +$$
$$32(11)h_2^*(2) - 8(682)h_2^*(1) - 8(300)h_2^*(0) +$$
$$8(300)t_{2,1,8}^{**}(4) = 8(518)h_2^*(1) + 8(1844)h_2^*(2) +$$
$$8(2196)h_2^*(3) + 8(704)h_2^*(4) - 8(394)h_2^*(5) - 8(228)h_2^*(6) -$$
$$8(518)t_{2,1,7}^{**}(5) = 8(-228h_2^*(2) - 912h_2^*(3) -$$
$$1368h_2^*(4) - 912h_2^*(5) - 228h_2^*(6) =$$
$$-8(228)t_{2,1,6}^{**}(6) = 0.$$

In view of (77),

$$t_{2,3,7}^{\wedge}(7) = 8(119)0h_2^*(7) - 8(4)0h_2^*(6) -$$
$$-8(45)h_2^*(5) - 8(4)(45)h_2^*(4) - 8(270)h_2^*(3) -$$
$$32(45)h_2^*(2) - 8(45)h_2^*(1) = -8(45)t_{2,1,7}^{**}(5) = 0$$

In view of (75) and (77),

$$t_{2,3,8}^{\wedge}(7) = 8(119)0h_2^*(7) - 8(4)0h_2^*(6) -$$
$$-8(135)h_2^*(5) - 8(4)(96)h_2^*(4) - 8(186)h_2^*(3) +$$
$$32(99)h_2^*(2) + 8(489)h_2^*(1) + 8(156)h_2^*(0) -$$
$$8(156)t_{2,1,8}^{**}(4) = -8(135)h_2^*(5) - 8(4)135h_2^*(4) -$$
$$8(810)h_2^*(3) - 8(540)h_2^*(2) - 8(135)h_2^*(1) =$$
$$-8(135)t_{2,1,7}^{**}(5) = 0.$$

In view of (75),

$$t_{2,4,8}^{\wedge}(7) = 8(119)0h_2^*(7) - 8(4)0h_2^*(6) -$$
$$-8(0)h_2^*(5) - 8(4)(6)h_2^*(4) - 8(96)h_2^*(3) -$$

$$32(36)h_2^*(2) - 8(96)h_2^*(1) - 8(24)h_2^*(0) =$$
$$-8(24)t_{2,1,8}^{**}(4) = 0.$$

Therefore,

$$t_{2,1,5}^*(7) = 8(4)(19)h_2^*(6) + 8(45)h_2^*(5) +$$
$$8(4)6h_2^*(4) + 8(11)h_2^*(3) + 32h_2^*(2) + 8h_2^*(1) =$$
$$8(76h_2^*(6) + 45h_2^*(5) + 24h_2^*(4) + 11h_2^*(3) + 4h_2^*(2) + h_2^*(1)) =$$
$$8t_{2,1,5}^{**}(7),$$

where

(99) $$t_{2,1,5}^{**}(7) = 76h_2^*(6) + 45h_2^*(5) + 24h_2^*(4) +$$

$$11h_2^*(3) + 4h_2^*(2) + h_2^*(1) = 16(-38 + 90 - 132 + 132 - 90 + 38) = 0,$$
$$t_{2,1,6}^*(7) = t_{2,1,7}^*(7) = 3t_{2,1,5}^*(7) = 0,$$
$$t_{2,1,8}^*(7) = t_{2,1,5}^*(7) = 0,$$
$$t_{2,2,6}^*(7) = t_{2,2,7}^*(7) = t_{2,2,8}^*(7) = t_{2,3,7}^*(7) =$$
$$t_{2,3,8}^*(7) = t_{2,4,8}^*(7) = 0.$$

Clearly,

(100) $$t_{2,1,4}^{\vee\vee}(8) := h_2^*(5) + 4h_2^*(6) = 32 - 32 = 0,$$

(101)
$$t_{2,1,4}^{**}(8) := 8h_2^*(7) + 6h_2^*(6) + 4h_2^*(5) + h_2^*(4)) = 8 - 48 + 128 - 88 = 0,$$

(102)
$$t_{2,1,5}^{**}(8) := 7(32(9)h_2^*(7) + (93)4h_2^*(6) + 220h_2^*(5) + 51h_2^*(4)) -$$

$$h_2^*(0) - 7(51)t_{2,1,4}^{**}(8) =$$
$$7(-120h_2^*(7) + 66h_2^*(6) + 16h_2^*(5)) - h_2^*(0) =$$
$$7(-120 - 528 + 512 + 136) = 0,$$

(103)
$$t_{2,1,6}^{**}(8) := 8(31)h_2^*(7) - 593h_2^*(6) - 8(134)h_2^*(5)) - 599h_2^*(4) + 65h_2^*(2) =$$

$$8(31 + 593) - 8(32)(134) + 599(88) - 65(360) =$$
$$8(640 - 16) - 256(134) + 8(6600 - 11 - 2925) =$$
$$128(39) - 256(134) + 128(229) = 256(134 - 134) = 0,$$

(104) $$t_{2,1,7}^{**}(8) := -t_{2,1,6}^{**}(8) +$$

$$56h_2^*(7) - 851h_2^*(6) - 1224h_2^*(5) - 633h_2^*(4) + 65h_2^*(2) =$$
$$-192h_2^*(7) - 258h_2^*(6) - 152h_2^*(5) - 34h_2^*(4) =$$
$$-3(64) + 129(16) - 19(256) + 187(16) =$$

$$316(16)-3(64)-19(256)=(79-3)64-19(256)=0,$$

(105) $$t^{**}_{2,2,5}(8):=-8h^*_2(7)+11h^*_2(6)+3h^*_2(5)=$$
$$-8-88+96=0,$$

(106) $$t^{\wedge\wedge}_{2,1,4}(9):=572h^*_2(6)+(1243)h^*_2(5)+$$
$$400h^*_2(4)=-11(32)13+11(32)(113-100)=0,$$

(107) $$t^{**}_{2,1,4}(9):=11h^*_2(6)-h^*_2(4)=0,$$

(108) $$t^{**}_{2,1,4}(9):=24h^*_2(6)+h^*_2(3)=0,$$

(109) $$h^*_2(0)=119h^*_2(6),h^*_2(2)=45h^*_2(6),$$

(110) $$h^*_2(4)=11h^*_2(6),h^*_23)=-24h^*_2(6)$$

(111) $$t^{**}_{2,1,6}(9):=-32(114)h^*_2(4)+8(206)h^*_2(3)=$$
$$-32(6)(19)(11)h^*_2(6)-8(206)(24)h^*_2(6)=$$
$$-8(24)(415)h^*_2(6).$$

In view of (91),(94),(86),(89), In view of (91),(94),

$$t^*_{2,i,k}(8)=0,\ \text{if } i=6,\ 7,\ 8,$$

$$t^*_{2,1,k}(8)=0,\ \text{for } k=1,\ 2,\ 3,8$$
$$t^*_{2,2,k}(8)=0,\ \text{for } k=1,\ 2,\ 3,\ 4,$$
$$t^*_{2,3,k}(8)=0,\ \text{for } k=1,\ 2,\ 3,\ 4,\ 5,$$
$$t^*_{2,4,k}(8)=0,\ \text{for } k=1,\ 2,\ 3,\ 4,\ 5,\ 6.$$
$$t^*_{2,5,k}(8)=0,\ \text{for } k=1,\ 2,\ 3,\ 4,\ 5,\ 6,\ 7.$$

$t^{\vee}_{2,i,k}(8)=0$, if $i=3,\ ...,\ 8,\ k=1,\ ...,\ 8.$

$$t^{\vee}_{2,1,4}(8)=(32)119h^*_2(7)+$$
$$(32)76h^*_2(6)+(32)45h^*_2(5)+(32)24h^*_2(4)+(32)11h^*_2(3)+$$
$$(32)4h^*_2(2)+32h^*_2(1)=32(119)h^*_2(7)+$$
$$32(76)h^*_2(6)+32(45)h^*_2(5)+32(24)h^*_2(4)+(32)11h^*_2(3)+$$
$$+32(4)h^*_2(2)+32h^*_2(1)=(32)119h^*_2(7)+4t^*_{2,1,5}(7)=$$
$$(32)119h^*_2(7),$$

$$t^{\wedge}_{2,1,4}(8)=8(4)119h^*_2(7)+$$
$$8(714)h^*_2(6)+8(4)119h^*_2(5)+8(119)h^*_2(4)=$$

$$8(119)(4h_2^*(7)+6h_2^*(6)+4h_2^*(5)+h_2^*(4))$$

$$t^*_{2,1,4}(8)=t^{\vee}_{2,1,4}(8)+t^{\wedge}_{2,1,4}(8)=$$
$$8(119)t^{**}_{2,1,4}(8)=0,$$

$$t^{\vee}_{2,1,5}(8)=8(4)257h_2^*(7)+(653)h_2^*(6)+8(4)96h_2^*(5)+$$
$$8(203)h_2^*(4)+32(23)h_2^*(3)+8(33)h_2^*(2)+$$
$$8(8)h_2^*(1)-8h_2^*(0)-8(8)t^{**}_{2,1,7}(5)=$$
$$8(4)257h_2^*(7)+8(653)h_2^*(6)+8(4)94h_2^*(5)+$$
$$8(171)h_2^*(4)+32(11)h_2^*(3)+8h_2^*(2)-8h_2^*(0)$$
$$-8t^{**}_{2,1,6}(6)=8(4)257h_2^*(7)+8(652)h_2^*(6)+$$
$$8(4)93h_2^*(5)+8(165)h_2^*(4)+$$
$$32(10)h_2^*(3)-8h_2^*(0)-320t^{\wedge\wedge}_{2,1,5}(7)=$$
$$8(4)257h_2^*(7)+8(492)h_2^*(6)+32(33)h_2^*(5)+$$
$$8(5)h_2^*(4)-8h_2^*(0)-40t^{**}_{2,1,4}(8)=$$
$$32(247)h_2^*(7)+8(462)h_2^*(6)+32(28)h_2^*(5)-8h_2^*(0),$$

$$t^{\wedge}_{2,1,5}(8)=8(4)257h_2^*(7)+$$
$$8(542)h_2^*(6)-8(4)243h_2^*(5)-8(1243)h_2^*(4)-32(100)h_2^*(3)+3200t^{**}_{2,1,7}(5)=$$
$$8(4)257h_2^*(7)+$$
$$8(2142)h_2^*(6)+8(4)357h_2^*(5)+8(357)h_2^*(4),$$

$$t^*_{2,1,5}(8)=t^{\vee}_{2,1,5}(8)+t^{\wedge}_{2,1,5}(8)=$$
$$32(7)(72)h_2^*(7)+32(7)(93)h_2^*(6)+32(7)(55)h_2^*(5)+$$
$$8(7)51h_2^*(4)-8h_2^*(0)=8t^{**}_{2,1,5}(8)=0,$$

$$t^{\vee}_{2,1,6}(8)=8(4)157h_2^*(7)+8(394)h_2^*(6)+8(4)57h_2^*(5)+$$
$$8(118)h_2^*(4)+32(13)h_2^*(3)+8(18)h_2^*(2)+$$
$$8(4)h_2^*(1)-16h_2^*(0)+16t^{**}_{2,1,8}(4)=$$
$$=8(4)157h_2^*(7)+8(394)h_2^*(6)+8(4)57h_2^*(5)+$$
$$8(120)h_2^*(4)+32(15)h_2^*(3)+8(30)h_2^*(2)+$$
$$96h_2^*(1)-96t^{**}_{2,1,5}(5)=$$
$$=8(4)157h_2^*(7)+8(394)h_2^*(6)+96(18)h_2^*(5)+$$
$$96(6)h_2^*(4)-96h_2^*(3)-48(3)h_2^*(2)+48(3)t^{**}_{2,1,6}(6)=$$
$$=8(4)157h_2^*(7)+8(412)h_2^*(6)+96(24)h_2^*(5)+$$
$$96(15)h_2^*(4)+96(5)h_2^*(3)-96(5)t^{\wedge\wedge}_{2,1,5}(7)=$$

$$= 8(4)157h_2^*(7) + 32(43)h_2^*(6) - 96(6)h_2^*(5) -$$
$$96(5)h_2^*(4) + 96(5)t_{2,1,4}^{**}(8) =$$
$$= 32(277)h_2^*(7) + 32(7)(19)h_2^*(6) + 96(14)h_2^*(5),$$

$$t_{2,1,6}^{\wedge}(8) = 8(4)157h_2^*(7) -$$
$$8(603)h_2^*(6) - 8(4)388h_2^*(5) - 8(113)h_2^*(4) +$$
$$32(255)h_2^*(3) + 8(455)h_2^*(2) - 32(255)t_{2,1,6}^{\wedge\wedge}(6) =$$
$$= 8(4)157h_2^*(7) -$$
$$8(603)h_2^*(6) - 32(7)274h_2^*(5) - 8(7)(599)h_2^*(4) + 8(7)(65)h_2^*(2),$$

$$t_{2,1,6}^{*}(8) = t_{2,1,6}^{\vee}(8) + t_{2,1,6}^{\wedge}(8) =$$
$$64(7)(31)h_2^*(7) - 8(593)7h_2^*(6) - 64(7)(137-3)h_2^*(5) -$$
$$8(7)(599)h_2^*(4) + 8(7)65h_2^*(2) = 56t_{2,1,6}^{**}(8) = 0,$$

$$t_{2,1,7}^{\vee}(8) = 8(4)19h_2^*(7) + 8(45)h_2^*(6) + 8(4)6h_2^*(5) +$$
$$8(11)h_2^*(4) + 32(1)h_2^*(3) + 8(1)h_2^*(2) +$$
$$8(4)0h_2^*(1) - 8h_2^*(0) + 8t_{2,1,8}^{**}(4) =$$
$$8(4)19h_2^*(7) + 8(45)h_2^*(6) + 8(4)6h_2^*(5) +$$
$$8(12)h_2^*(4) + 32(2)h_2^*(3) + 8(7)h_2^*(2) +$$
$$8(4)1h_2^*(1) - 32t_{2,1,7}^{**}(5) =$$
$$8(4)19h_2^*(7) + 8(45)h_2^*(6) + 32(5)h_2^*(5) +$$
$$-32h_2^*(4) + 32(-4)h_2^*(3) - 8(9)h_2^*(2) +$$
$$72t_{2,1,6}^{**}(6) =$$
$$8(4)19h_2^*(7) + 8(54)h_2^*(6) + 32(14)h_2^*(5) +$$
$$+8(50)h_2^*(4) + 32(5)h_2^*(3) -$$
$$160t_{2,1,5}^{**}(7) =$$
$$8(4)19h_2^*(7) - 8(26)h_2^*(6) - 32(16)h_2^*(5) +$$
$$-8(30)h_2^*(4) +$$
$$240t_{2,1,4}^{**}(8) =$$
$$32(79)h_2^*(7) + 8(154)h_2^*(6) + 32(14)h_2^*(5),$$

$$t_{2,1,7}^{\wedge}(8) = 8(4)19h_2^*(7) -$$
$$8(431)h_2^*(6) - 8(4)26h_2^*(5) + 8(1249)h_2^*(4) +$$
$$32(355)h_2^*(3) + 8(455)h_2^*(2) - 32(355)t_{2,1,6}^{\wedge\wedge}(6) =$$
$$= 8(4)19h_2^*(7) -$$
$$(8)7(873)h_2^*(6) - 32(7)(308)h_2^*(5) - (8)7(633)h_2^*(4) +$$

$$+8(7)(65)h_2^*(2),$$

$$t_{2,1,7}^*(8) = t_{2,1,7}^\vee(8) + t_{2,1,6}^\wedge(8) =$$
$$56t_{2,1,7}^{**}(8) = 0,$$

$$t_{2,2,5}^\vee(8) = t_{2,2,8}^\vee(8) = 8(4)(19)h_2^*(7) + 8(45)h_2^*(6)+$$
$$8(4)6h_2^*(5) + 8(11)h_2^*(4) + 32h_2^*(3) + 8h_2^*(2) =$$
$$t_{2,1,7}^\vee(8) + 8h_2^*(0),$$

$$t_{2,2,5}^\wedge(8) = 8(4)(19)h_2^*(7) + 8(304)h_2^*(6)+$$
$$8(4)114h_2^*(5) + 8(304)h_2^*(4) + 32(19)h_2^*(3) =$$
$$32(19)((h_2^*(7) + 4h_2^*(6) + 6h_2^*(5) + 4h_2^*(4) + h_2^*(3)-$$
$$32(19)t_{2,1,5}^{\wedge\wedge}(7) = 32(19)h_2^*(7),$$

$$t_{2,2,5}^*(8) = 32(79)h_2^*(7) + 8(154)h_2^*(6) + 32(14)h_2^*(5)+$$
$$+8h_2^*(0) + 32(19)h_2^*(7) = 8\times$$
$$8(14(28h_2^*(7) + 11h_2^*(6) + 4h_2^*(5)) + h_2^*(0))+$$
$$8t_{2,1,5}^{**}(8) = 56(-64h_2^*(7) + 88h_2^*(6) + 24h_2^*(5)) =$$
$$448(-8h_2^*(7) + 11h_2^*(6) + 3h_2^*(5) = 448t_{2,2,5}^{**}(8) = 0,$$

$$t_{2,2,7}^\vee(8) = t_{2,2,6}^\vee(8) =$$
$$8(4)(57)h_2^*(7) + 8(135)h_2^*(6)+$$
$$8(4)18h_2^*(5) + 8(33)h_2^*(4) + 32(3)h_2^*(3) + 8(3)h_2^*(2) =$$
$$3t_{2,2,5}^\vee(8),$$

$$t_{2,2,6}^\wedge(8) = 8(4)(57)h_2^*(7) + 8(653)h_2^*(6)+$$
$$8(4)83h_2^*(5) + 8(-642)h_2^*(4) + 32(-202)h_2^*(3) - 8(259)h_2^*(2) =$$
$$8(4)(57)h_2^*(7) + 8(912)h_2^*(6)+$$
$$8(4)342h_2^*(5) + 8(912)h_2^*(4) + 32(57)h_2^*(3) + 8(-259)\times$$
$$(h_2^*(6) + 4h_2^*(5) + 6h_2^*(4) + 4h_2^*(3) + h_2^*(2) =$$
$$3t_{2,2,5}^\wedge(8) + 8(-259)h_2^*(6)+$$
$$8(4)(-259)h_2^*(5) + 8(-1554)h_2^*(4) + 32(-259)h_2^*(3) - 8(259)h_2^*(2) =$$
$$3t_{2,2,5}^\wedge(8) - 8(259)t_{2,1,6}^{**}(6) = 3t_{2,2,5}^\wedge(8),$$

$$t_{2,2,7}^\wedge(8) = 8(4)(57)h_2^*(7) + 8(394)h_2^*(6)-$$
$$8(4)101h_2^*(5) + 8(-996)h_2^*(4)+$$
$$32(-11)h_2^*(3) + 8(682)h_2^*(2) + 8(300)h_2^*(1)-$$

$$8(300)t^{**}_{2,1,7}(5) = 8(4)(57)h^*_2(7) + 8(394)h^*_2(6)-$$
$$8(704)h^*_2(5) - 8(2196)h^*_2(4) - 8(1844)h^*_2(3) - 8(518)h^*_2(2) =$$
$$8(4)(57)h^*_2(7) + 8(912)h^*_2(6)+$$
$$8(4)342h^*_2(5) + 8(912)h^*_2(4) + 32(57)h^*_2(3)+$$
$$8(-518)h^*_2(6) + 8(-2072)h^*_2(5) - 8(3108)h^*_2(4)-$$
$$8(2072)h^*_2(3) - 8(518)h^*_2(2) =$$
$$3t^{\wedge}_{2,2,5}(8) - 8(518)t^{**}_{2,1,6}(6) = 3t^{\wedge}_{2,2,5}(8),$$

$$t^*_{2,2,7}(8) = t^*_{2,2,6}(8) = 3t^*_{2,2,5}(8) = 0,$$

$$t^{\wedge}_{2,2,8}(8) = 8(4)(19)h^*_2(7) + 8(45)h^*_2(6)-$$
$$8(4)70h^*_2(5) + 8(-169)h^*_2(4)+$$
$$32(91)h^*_2(3) + 8(227)h^*_2(2)+$$
$$8(-176)h^*_2(1) + 8(-119)h^*_2(0) + 8(119)t^{**}_{2,1,8}(4) =$$
$$= 8(4)(19)h^*_2(7) + 8(45)h^*_2(6)-$$
$$8(4)70h^*_2(5) + 8(-50)h^*_2(4) + 8(840)h^*_2(3)+$$
$$8(941)h^*_2(2) + 8(300)h^*_2(1) - 8(300)t^{**}_{2,1,7}(5) =$$
$$8(4)(19)h^*_2(7) + 8(45)h^*_2(6)-$$
$$-8(580)h^*_2(5) + 8(-1250)h^*_2(4) + 8(-960)h^*_2(3) - 8(259)h^*_2(2) =$$
$$t^{\wedge}_{2,2,5}(8) - 259h^*_2(6) - 1036h^*_2(5) - 1556h^*_2(4)-$$
$$1036h^*_2(3) - 8(259)h^*_2(2) =$$
$$t^{\wedge}_{2,2,5}(8) - 8(259)t^{**}_{2,1,6}(6) = t^{\wedge}_{2,2,5}(8),$$

$$t^*_{2,2,8}(8) = t^*_{2,2,5}(8) = 0,$$

$$t^*_{2,3,6}(8) = t^{\wedge}_{2,3,6}(8) = 8(45)h^*_2(6) + 8(4)45h^*_2(5)+$$
$$8(270)h^*_2(4) + 32(45)h^*_2(3) + 8(45)h^*_2(2) =$$
$$360(h^*_2(6) + 4h^*_2(5) + 270h^*_2(4) + 4h^*_2(3) + h^*_2(2) =$$
$$360t^{**}_{2,1,6}(6) = 0,$$

$$t^*_{2,3,7}(8) = t^{\wedge}_{2,3,7}(8) = 8(135)h^*_2(6) + 8(4)96h^*_2(5)+$$
$$8(186)h^*_2(4) - 32(99)h^*_2(3) - 8(489)h^*_2(2) - 8(156)h^*_2(2)+$$
$$8(156)t^{**}_{2,1,7}(5) = 8(135)h^*_2(6) + 8(540)h^*_2(5)+$$
$$+8(810)h^*_2(4) + 8(540)h^*_2(3) + 8(135)h^*_2(2) =$$
$$1248t^{**}_{2,1,6}(6) = 0,$$

$$t^*_{2,3,8}(8) = t^\wedge_{2,3,8}(8) = 8(135)h^*_2(6) + 8(4)57h^*_2(5)-$$
$$8(253)h^*_2(4) - 32(148)h^*_2(3) - 8(3)h^*_2(2) + 8(428)h^*_2(1)+$$
$$8(185)h^*_2(0) - 8(185)t^{**}_{2,1,8}(4) =$$
$$t^*_{2,3,8}(8) = t^\wedge_{2,3,8}(8) = 8(135)h^*_2(6) + 8(4)57h^*_2(5)-$$
$$8(438)h^*_2(4) - 32(333)h^*_2(3) - 8(1113)h^*_2(2) - 8(312)h^*_2(1) =$$
$$24(45)h^*_2(6) + (24)76h^*_2(5)-$$
$$24(146)h^*_2(4) - 24(444)h^*_2(3) - 24(371)h^*_2(2) - 24(104)h^*_2(1)+$$
$$24(104)t^{**}_{2,1,7}(5) = 24(45)h^*_2(6) + (24)180h^*_2(5)+$$
$$24(270)h^*_2(4) + 24(180)h^*_2(3) + 24(45)h^*_2(2) =$$
$$24(45)t^{**}_{2,1,6}(6) = 0,$$

$$t^*_{2,4,7}(8) = t^\wedge_{2,4,7}(8) = 8(24)h^*_2(5) + 8(96)h^*_2(4)+$$
$$+8(24)6h^*_2(3) + 8(96)h^*_2(2) + 8(24)h^*_2(1) =$$
$$192t^{**}_{2,1,7}(5) = 0,$$

$$t^*_{2,4,8}(8) = t^\wedge_{2,4,8}(8) =$$
$$8(72)h^*_2(5) + 8(203)h^*_2(4)+$$
$$8(92)h^*_2(3) - 8(222)h^*_2(2) - 8(268)h^*_2(1) - 8(85)h^*_2(0)-$$
$$3t^{**}_{2,4,7}(8) = -8(85)h^*_2(4) - 8(340)h^*_2(3)-$$
$$8(510)h^*_2(2) - 8(340)h^*_2(1) - 8(85)h^*_2(0) =$$
$$-680t^{**}_{2,1,8}(4) = 0,$$

$$t^*_{2,5,8}(8) = t^\wedge_{2,5,8}(8) = 8(11)h^*_2(4)+$$
$$+8(44)h^*_2(3) + 8(66)h^*_2(2) + 8(44)h^*_2(1) + 88h^*_2(0) =$$
$$88t^{**}_{2,1,8}(4) = 0.$$

In view of (91),(94),(86),(89),

$$t^*_{2,i,k}(9) = 0 \text{ if } i = 7,\ 8,$$

$$t^*_{2,1,k}(9) = 0 \text{ for } k = 1,\ 2,\ 7,\ 8$$
$$t^*_{2,2,k}(9) = 0 \text{ for } k = 1,\ 2,\ 3, 8$$
$$t^*_{2,3,k}(9) = 0 \text{ for } k = 1,\ 2,\ 3,\ 4,$$
$$t^*_{2,4,k}(9) = 0 \text{ for } k = 1,\ 2,\ 3,\ 4,\ 5,$$
$$t^*_{2,5,k}(9) = 0 \text{ for } k = 1,\ 2,\ 3,\ 4,\ 5,\ 6.$$
$$t^*_{2,6,k}(9) = 0 \text{ for } k = 1,\ 2,\ 3,\ 4,\ 5,\ 6,\ 7,$$

$$t^\vee_{2,i,k}(9) = 0 \text{ for } i = 4,\ ...,\ 8; k = 1,\ ...,\ 8,$$

$$t^{\vee}_{2,1,3}(9) = (48)119h^*_2(7)+$$
$$48(76)h^*_2(6) + 48(45)h^*_2(5) + 48(24)h^*_2(4) + 48(11)h^*_2(3)+$$
$$48(4)h^*_2(2) + 48h^*_2(1) = (3/2)t^{\vee}_{2,1,4}(8) = (48)119h^*_2(7),$$

$$t^{\wedge}_{2,1,3}(9) = -8(6)119h^*_2(7)+$$
$$-8(4)119h^*_2(6) - 8(119)h^*_2(5) = -48(119)h^*_2(7),$$

$$t^*_{2,1,3}(9) = t^{\vee}_{2,1,3}(9) + t^{\wedge}_{2,1,3}(9) = 0$$

$$t^{\wedge}_{2,1,4}(9) = -8(542)h^*_2(7)+$$
$$32(243)h^*_2(6) + 8(1243)h^*_2(5) + 3200h^*_2(4)-$$
$$8t^{\wedge\wedge}_{2,1,4}(9) = -8(542)h^*_2(7) + 3200h^*_2(6),$$

$$t^*_{2,1,4}(9) = 48(122)h^*_2(6) + 48(28)h^*_2(5)+$$
$$48(4)h^*_2(4) - 48(9)h^*_2(3) - 48(6)h^*_2(2)+$$
$$48(6)t^{**}_{2,1,6}(6) = 48(128)h^*_2(6) + 48(52)h^*_2(5)-$$
$$48(40)h^*_2(4) + 48(15)h^*_2(3) - 48(15)t^{\wedge\wedge}_{2,1,5}(7) =$$
$$96(34)h^*_2(6) - 96(19)h^*_2(5) - 96(10)h^*_2(4)+$$
$$96(19)t^{\vee\vee}_{2,1,4}(8) = 960t^{**}_{2,1,4}(9) =$$
$$960(11h^*_2(6) - h^*_2(4)) = 0,$$

$$t^{\vee}_{2,1,5}(9) = -(8)603h^*_2(7)-$$
$$32(101)h^*_2(6) - 8(253)h^*_2(5) - 32(36)h^*_2(4) - 8(71)h^*_2(3)-$$
$$8(28)h^*_2(2) - 8(9)h^*_2(1) - 8(8)h^*_2(0),$$

$$t^{\wedge}_{2,1,5}(9) = 8(603)h^*_2(7)+$$
$$32(388)h^*_2(6) + 8(113)h^*_2(5) - 32(255)h^*_2(4) - 8(455)h^*_2(3),$$

$$t^*_{2,1,5}(9) = 32(287)h^*_2(6)-$$
$$8(140)h^*_2(5) - 32(291)h^*_2(4) - 8(526)h^*_2(3)-$$
$$8(28)h^*_2(2) - 8(9)h^*_2(1) - 8(8)h^*_2(0)+$$
$$64t^{**}_{2,1,8}(4) =$$
$$32(287)h^*_2(6) - 8(140)h^*_2(5) - 32(289)h^*_2(4) - 8(494)h^*_2(3)+$$
$$8(20)h^*_2(2) + 8(23)h^*_2(1)-$$
$$8(23)t^{**}_{2,1,7}(5) =$$
$$32(287)h^*_2(6) - 8(163)h^*_2(5) - 32(312)h^*_2(4) - 8(632)h^*_2(3)-$$

$$8(72)h_2^*(2)+$$
$$8(72)t^{**}_{2,1,6}(6) =$$
$$32(305)h_2^*(6) + 8(125)h_2^*(5) - 32(204)h_2^*(4) - 8(344)h_2^*(3) =$$
$$64(90)h_2^*(6) - 64(102)h_2^*(4) - 64(43)h_2^*(3) =$$
$$-64((1122 - 90)h_2^*(6) - 43h_2^*(3)) = -64(43)(24h_2^*(6) + h_2^*(3)) =$$
$$-64(43)t^{**}_{2,1,5}(9) = 0,$$

$$t^{\vee}_{2,1,6}(9) = -(8)431h_2^*(7)-$$
$$32(70)h_2^*(6) - 8(169)h_2^*(5) - 32(23)h_2^*(4) - 8(43)h_2^*(3)-$$
$$8(16)h_2^*(2) - 8(5)h_2^*(1) - 8(4)h_2^*(0),$$

$$t^{\wedge}_{2,1,6}(9) = 8(431)h_2^*(7) + 32(70)h_2^*(6)-$$
$$8(545)h_2^*(5) - 32(91)h_2^*(4) + 8(249)h_2^*(3) + 8(176)h_2^*(2),$$

$$t^{*}_{2,1,6}(9) =$$
$$-8(714)h_2^*(5) - 32(114)h_2^*(4) + 8(206)h_2^*(3)+$$
$$8(160)h_2^*(2) - 8(5)h_2^*(1) - 8(4)h_2^*(0) =$$
$$8(6)(119)4h_2^*(6) + t^{**}_{2,1,6}(9)+$$
$$8(160)h_2^*(2) - 8(5)h_2^*(1) - 8(4)h_2^*(0) =$$
$$-8(24)(415)h_2^*(6)+$$
$$8(160)h_2^*(2) - 8(5)h_2^*(1) + 8(20)h_2^*(0) =$$
$$40(-24(83)h_2^*(6) + 32(45)h_2^*(6) + 76h_2^*(6) + 476h_2^*(6) =$$
$$24(40)h_2^*(6)(-83 + 60 + 23) = 0,$$

$$t^{\vee}_{2,2,4}(9) = (8)304h_2^*(7)+$$
$$32(45)h_2^*(6) + 8(96)h_2^*(5) + 32(11)h_2^*(4) + 8(16)h_2^*(3)+$$
$$8(4)h_2^*(2)),$$

$$t^{\wedge}_{2,2,4}(9) = -8(304)h_2^*(7)-$$
$$32(-114)h_2^*(6) - 8(304)h_2^*(5) - 32(19)h_2^*(4),$$

$$t^{*}_{2,2,4}(9) =$$
$$-32(69)h_2^*(6) - 8(208)h_2^*(5) - 32(8)h_2^*(4) + 8(16)h_2^*(3)+$$
$$8(4)h_2^*(2)) =$$
$$-32(24)h_2^*(6) - 8(208)h_2^*(5) - 32(8)h_2^*(4) + 8(16)h_2^*(3) =$$
$$128(-6h_2^*(6) + 52h_2^*(6) - 22h_2^*(6) - 24h_2^*(6)) = 0,$$

$$t^{\vee}_{2,2,5}(9) = (8)653h^*_2(7)+$$
$$32(96)h^*_2(6) + 8(203)h^*_2(5) + 32(23)h^*_2(4) + 8(33)h^*_2(3)+$$
$$8(8)h^*_2(2) - 8h^*_2(1),$$

$$t^{\wedge}_{2,2,5}(9) = -8(653)h^*_2(7)-$$
$$32(-83)h^*_2(6) + 8(642)h^*_2(5) + 32(202)h^*_2(4)+$$
$$8(259)h^*_2(3)$$

$$t^{*}_{2,2,5}(9) =$$
$$32(13)h^*_2(6) + 8(845)h^*_2(5) + 32(225)h^*_2(4) + 8(292)h^*_2(3)+$$
$$8(8)h^*_2(2) - 8h^*_2(1) =$$
$$32h^*_2(6)(13 + 19 - 292(6) + 90 - (169)5 + (5)(45)(11)) =$$
$$32h^*_2(6)(32 - 1752 + 90 - 845 + 2500 - 25) = 32h^*_2(6)(2590 - 2590) = 0.$$

$$t^{\vee}_{2,2,6}(9) = (8)394h^*_2(7)+$$
$$32(57)h^*_2(6) + 8(118)h^*_2(5) + 32(13)h^*_2(4) + 8(18)h^*_2(3)+$$
$$32h^*_2(2) - 16h^*_2(1),$$

$$t^{\wedge}_{2,2,6}(9) = -8(394)h^*_2(7)+$$
$$32(101)h^*_2(6) + 8(996)h^*_2(5) + 32(11)h^*_2(4)-$$
$$8(682)h^*_2(3) - 32(75)h^*_2(2),$$

$$t^{*}_{2,2,6}(9) = t^{\vee}_{2,2,6}(9) + t^{\wedge}_{2,2,6}(9) =$$
$$32(158)h^*_2(6) + 8(1114)h^*_2(5) + 32(24)h^*_2(4)-$$
$$8(664)h^*_2(3)-$$
$$32(74)h^*_2(2) - 16h^*_2(1) =$$
$$32h^*_2(6)(158 - 1114 + 264 + 6(664) - 74(45) + 38) =$$
$$32h^*_2(6)(460 - 1114 + 3984 - 3700 + 370) = 0,$$

$$t^{\vee}_{2,2,7}(9) = (8)45h^*_2(7)+$$
$$32(6)h^*_2(6) + 8(11)h^*_2(5) + 32h^*_2(4) + 8h^*_2(3) - 8h^*_2(1) =$$
$$(8)45h^*_2(7)+$$
$$32(6)h^*_2(6) - 8(11)4h^*_2(6) + 32(11)h^*_2(6) - 8(24)h^*_2(6)-$$
$$-8h^*_2(1) = (8)45h^*_2(7) - 8h^*_2(1),$$

$$t^{\wedge}_{2,2,7}(9) = -8(45)h^*_2(7)+$$

$$32(70)h_2^*(6)+8(169)h_2^*(5)+32(-91)h_2^*(4)-$$
$$8(227)h_2^*(3)+32(44)h_2^*(2)+8(119)h_2^*(1)-$$
$$8(118)t_{2,1,7}^{**}(5)=-8(45)h_2^*(7)+32(70)h_2^*(6)+$$
$$8(51)h_2^*(5)-32(209)h_2^*(4)-8(935)h_2^*(3)-32(74)h_2^*(2)+$$
$$8h_2^*(1)=-8(45)h_2^*(7)+32(19)h_2^*(6)-32(11)(209)h_2^*(6)+$$
$$8(11)(85)24h_2^*(6)-32(37)90h_2^*(6)+8h_2^*(1)=$$
$$-8(45)h_2^*(7)+32h_2^*(6)(19-209(11)+510(11)-3330)+8h_2^*(1)=$$
$$-8(45)h_2^*(7)+32(11)h_2^*(6)(-209+510-301)+8h_2^*(1)=$$
$$-8(45)h_2^*(7)+8h_2^*(1),$$

$$t_{2,2,7}^*(9)=t_{2,2,7}^\vee(9)+t_{2,2,7}^\wedge(9)=0,$$

$$t_{2,3,5}^\vee(9)=t_{2,3,8}^\vee(9)=(8)45h_2^*(7)+$$
$$32(6)h_2^*(6)+8(11)h_2^*(5)+32h_2^*(4)+8h_2^*(3)=$$
$$(8)45h_2^*(7)+$$
$$32(6)h_2^*(6)-8(11)4h_2^*(6)+32(11)h_2^*(6)-8(24)h_2^*(6)=360,$$

$$t_{2,3,5}^\wedge(9)=-8(45)h_2^*(7)+$$
$$32(-45)h_2^*(6)+8(-270)h_2^*(5)+32(-45)h_2^*(4)+$$
$$8(-45)h_2^*(3)=-8(45)h_2^*(7)-8(45)t_{2,1,5}^{\wedge\wedge}(7)=$$
$$-360,$$

$$t_{2,3,5}^*(9)=t_{2,3,5}^\vee(9)+t_{2,3,5}^\wedge(9)=360-360=0,$$

$$t_{2,3,6}^\vee(9)=t_{2,3,7}^\vee(9)=(8)135h_2^*(7)+$$
$$32(18)h_2^*(6)+8(33)h_2^*(5)+32(3)h_2^*(4)+8(3)h_2^*(3)=3t_{2,3,5}^\vee(9)=1080,$$

$$t_{2,3,6}^\wedge(9)=-8(135)h_2^*(7)+$$
$$32(-96)h_2^*(6)+8(-186)h_2^*(5)+32(99)h_2^*(4)+$$
$$8(489)h_2^*(3)+8(156)h_2^*(2)-8(156)t_{2,1,6}^{**}(6)=$$
$$-8(135)h_2^*(7)-32(135)h_2^*(6)-8(810)h_2^*(5)-$$
$$32(135)h_2^*(4)-8(135)h_2^*(3)=-1080-$$
$$1080(4h_2^*(6)+6h_2^*(5)+4h_2^*(4)+h_2^*(3))=$$
$$-1080(1+t_{2,1,5}^{\wedge\wedge}(7))=-1080,$$

$$t_{2,3,6}^*(9)=t_{2,3,6}^\vee(9)+t_{2,3,6}^\wedge(9)=1080-1080=0,$$

$$t^{\wedge}_{2,3,7}(9) = -8(135)h^*_2(7)+$$
$$32(-57)h^*_2(6) + 8(253)h^*_2(5) + 32(148)h^*_2(4)+$$
$$8(3)h^*_2(3) + 8(-428)h^*_2(2) - 8(185)h^*_2(1) + 8(185)t^{**}_{2,1,7}(5) =$$
$$-8(135)h^*_2(7)+$$
$$32(-57)h^*_2(6) + 8(438)h^*_2(5) + 32(333)h^*_2(4)+$$
$$8(1113)h^*_2(3) + 32(78)h^*_2(2) =$$
$$-8(135)h^*_2(7) + 32(3)h^*_2(6)(-19 - 146 + 111(11) - (371)6 + 26(45)) =$$
$$-1080+32(9)(11(32)-742+435 = -1080+32(9)(352-742+390) = -1080,$$

$$t^*_{2,3,7}(9) = t^{\vee}_{2,3,7}(9) + t^{\wedge}_{2,3,7}(9) = 1080 - 1080 = 0,$$

$$t^{\wedge}_{2,3,8}(9) = -8(45)h^*_2(7)+$$
$$32(-6)h^*_2(6) + 8(169)h^*_2(5) + 32(23)h^*_2(4)+$$
$$8(-227)h^*_2(3) + 8(-128)h^*_2(2) + 8(119)h^*_2(1) + 8(76)h^*_2(0) =$$
$$-8(45)h^*_2(7) + 32h^*_2(6)(-6 - 169 + 253 + 227(6) - 32(45)) =$$
$$-360 + h^*_2(6)(-175 + 253 + 1362 - 1440) = -360,$$

$$t^*_{2,3,8}(9) = t^{\vee}_{2,3,8}(9) + t^{\wedge}_{2,3,8}(9) = 360 - 360 = 0,$$

$$t^*_{2,4,6}(9) = t^{\wedge}_{2,4,6}(9) =$$
$$32(-6)h^*_2(6) + 8(-96)h^*_2(5) + 32(-36)h^*_2(4)+$$
$$8(-96)h^*_2(3) - 8(24)h^*_2(2) = 8(24)2, 1, 6^{**}(6) = 0,$$

$$t^*_{2,4,7}(9) = t^{\wedge}_{2,4,7}(9) =$$
$$32(-18)h^*_2(6) + 8(-203)h^*_2(5) + 32(-23)h^*_2(4)+$$
$$8(222)h^*_2(3) + 8(268)h^*_2(2) + 8(85)h^*_2(1)- = 8(85)t^{**}_{2,1,7}(5) =$$
$$8(-72)h^*_2(6) + 8(-288)h^*_2(5) + 32(-108)h^*_2(4)+$$
$$8(-288)h^*_2(3) + 8(-72)h^*_2(2) = -8(72)t^{**}_{2,1,6}(6) = 0,$$

$$t^*_{2,4,8}(9) = t^{\wedge}_{2,4,8}(9) =$$
$$32(-18)h^*_2(6) + 8(-118)h^*_2(5) + 32(36)h^*_2(4)+$$
$$8(316)h^*_2(3) + 8(-16)h^*_2(2) + 8(-246)h^*_2(1) - 8(104)h^*_2(0)+$$
$$8(104)t^{**}_{2,1,8}(4) =$$
$$32(-18)h^*_2(6) + 8(-118)h^*_2(5) + 32(62)h^*_2(4)+$$
$$8(732)h^*_2(3) + 8(608)h^*_2(2) + 8(170)h^*_2(1) - t^*_{2,4,7}(9) =$$
$$8(85)h^*_2(5) + 32(85)h^*_2(4) + 8(510)h^*_2(3) + 8(340)h^*_2(2)+$$

$$8(85)h_2^*(1) = 680t_{2,1,7}^{**}(5) = 0,$$

$$t_{2,5,7}^*(9) = t_{2,5,7}^{\wedge}(9) = 8(-11)h_2^*(5)+$$
$$32(-11)h_2^*(4) + 8(-66)h_2^*(3) + 8(-44)h_2^*(2)+$$
$$8(-11)h_2^*(1) = -88t_{2,1,7}^{**}(5) = 0,$$

$$t_{2,5,8}^*(9) = t_{2,5,7}^{\wedge}(9) = 8(-33)h_2^*(5)+$$
$$32(-23)h_2^*(4) + 8(-38)h_2^*(3) + 8(108)h_2^*(2)+$$
$$8(127)h_2^*(1) + 8(40)h_2^*(0) - 3t_{2,5,7}^*(9) =$$
$$8(40)h_2^*(4) + 8(160)h_2^*(3) + 8(240)h_2^*(2) + 8(160)h_2^*(1)+$$
$$8(40)h_2^*(0) = 320t_{2,1,8}^{**}(4) = 0,$$

$$t_{2,6,8}^*(9) = t_{2,6,8}^{\wedge}(9) = 32(-1)h_2^*(4)+$$
$$8(-16)h_2^*(3) + 8(-24)h_2^*(2) + 8(-16)h_2^*(1) + 8(-4)h_2^*(0) =$$
$$-32t_{2,1,6}^{**}(6) = 0.$$
$$t_{2,1,4}^{\vee}(9) = (8)542h_2^*(7)+$$
$$32(83)h_2^*(6) + 8(186)h_2^*(5) + 32(23)h_2^*(4) + 8(38)h_2^*(3)+$$
$$8(12)h_2^*(2) + 16h_2^*(1) - 32h_2^*(0) + 32t_{2,1,8}^{**}(4) =$$
$$= (8)542h_2^*(7) + 32(83)h_2^*(6)+$$
$$8(186)h_2^*(5) + 32(24)h_2^*(4) + 8(54)h_2^*(3)+$$
$$8(36)h_2^*(2) + 8(18)h_2^*(1) - 48(3)t_{2,1,7}^{**}(5) =$$
$$= (8)542h_2^*(7) + 32(83)h_2^*(6)+$$
$$48(28)h_2^*(5) + 48(4)h_2^*(4) - 48(9)h_2^*(3)-$$
$$48(6)h_2^*(2).$$

In view of (91),(94),(86),(89),

$$t_{2,i,k}^*(10) = 0 \text{ if } i =, 8,$$
$$t_{2,1,k}^*(10) = 0 \text{ for } k = 1,\ 6,\ 7,\ 8$$
$$t_{2,2,k}^*(10) = 0 \text{ for } k = 1,\ 2,\ 7,\ 8$$
$$t_{2,3,k}^*(10) = 0 \text{ for } k = 1,\ 2,\ 3, 8$$
$$t_{2,4,k}^*(10) = 0 \text{ for } k = 1,\ 2,\ 3,\ 4,$$
$$t_{2,5,k}^*(10) = 0 \text{ for } k = 1,\ 2,\ 3,\ 4,\ 5,$$
$$t_{2,6,k}^*(10) = 0 \text{ for } k = 1,\ 2,\ 3,\ 4,\ 5,\ 6.$$
$$t_{2,7,k}^*(10) = 0 \text{ for } k = 1,\ 2,\ 3,\ 4,\ 5,\ 6,\ 7.$$
$$t_{2,i,k}^{\vee}(10) = 0 \text{ for } i = 5,\ ...,\ 8; k = 1,\ ...,\ 8,$$

$$t^{\vee}_{2,1,2}(10) = (32)119h^*_2(7)+$$
$$32(76)h^*_2(6) + 32(45)h^*_2(5) + 32(24)h^*_2(4) + 32(11)h^*_2(3)+$$
$$32(4)h^*_2(2) + 32h^*_2(1) = t^{\vee}_{2,1,4}(8) = (32)119h^*_2(7),$$

$$t^{\wedge}_{2,1,2}(10) = -(32)119h^*_2(7),$$

$$t^{*}_{2,1,2}(10) = t^{\vee}_{2,1,2}(10) + t^{\wedge}_{2,1,2}(10) = 0,$$

$$t^{\vee}_{2,1,3}(10) = 32(-243)h^*_2(7)+$$
$$48(-107)h^*_2(6) + 48(-66)h^*_2(5) + 48(-37)h^*_2(4)+$$
$$48(-18)h^*_2(3)+$$
$$48(-7)h^*_2(2) + 48(-2)h^*_2(1) + 48(-1)h^*_2(0) =$$
$$32(-243)h^*_2(7)+$$
$$48h^*_2(6)(-107 + 264 - 407 + 432 - 315 + 152 - 119) =$$
$$32(-243)h^*_2(7) - 8(600h^*_2(6)),$$

$$t^{\wedge}_{2,1,3}(10) = 32(-243)h^*_2(7) + 8(-1243)h^*_2(6) - (3200)h^*_2(5) =$$
$$32(-243)h^*_2(7) + 8(-1243)h^*_2(6) + 8(1600)h^*_2(6) =$$
$$32(-243)h^*_2(7) + 8(357)h^*_2(6),$$

$$t^{*}_{2,1,3}(10) = t^{\vee}_{2,1,3}(10) + t^{\wedge}_{2,1,3}(10) =$$
$$4(-243)8h^*_2(7) - 8(600h^*_2(6))+$$
$$4(-243)8h^*_2(7) + 8(357)h^*_2(6) =$$
$$8(243)h^*_2(6) - 8(243)h^*_2(6) = 0$$

$$t^{\vee}_{2,1,4}(10) = 32(-388)h^*_2(7)+$$
$$32(-249)h^*_2(6) + 32(-148)h^*_2(5) + 32(-79)h^*_2(4)+$$
$$32(-36)h^*_2(3)+$$
$$32(-13)h^*_2(2) + 32(-4)h^*_2(1) + 32(-3)h^*_2(0) =$$
$$32(-388)h^*_2(7)+$$
$$32h^*_2(6)(-249 + 592 - 869 + 864 - 585 + 304 - 357) =$$
$$32(-388)h^*_2(7) - 32(300)h^*_2(6),$$

$$t^{\wedge}_{2,1,4}(10) = 32(-388)h^*_2(7) + 8(-113)h^*_2(6) + (32)255h^*_2(5) + 8(455)h^*_2(4) =$$

$$= 32(-388)h_2^*(7) + 8(-113)h_2^*(6) - (32)1020h_2^*(6) + 8(5005)h_2^*(6) =$$
$$32(-388)h_2^*(7) + (32)(203)h_2^*(6)),$$

$$t^*_{2,1,4}(10) = t^\vee_{2,1,4}(10) +$$
$$t^\wedge_{2,1,4}(10) = 32h_2^*(6)(97 - 97) = 0,$$

$$t^\vee_{2,1,5}(10) = 32(-70)h_2^*(7) +$$
$$8(-169)h_2^*(6) + 32(-23)h_2^*(5) + 8(-43)h_2^*(4) +$$
$$32(-4)h_2^*(3) +$$
$$8(-5)h_2^*(2) + 32(-1)h_2^*(1) + 8(-7)h_2^*(0) =$$
$$8h_2^*(6)(35 - 169 + 368 - 473 + 384 - 225 + 304 - 833) = -(609)8h_2^*(6),$$

$$t^\wedge_{2,1,5}(10) = 32(-70)h_2^*(7) + 8(545)h_2^*(6) +$$
$$(32)91h_2^*(5) + 8(-249)h_2^*(4) + 8(-176)h_2^*(3) =$$
$$8h_2^*(6)(35 + 545 - 1456 + 11(384 - 249) = (609)8h_2^*(6),$$

$$t^*_{2,1,5}(10) = t^\vee_{2,1,5}(10) +$$
$$t^\wedge_{2,1,4}(10) = 8h_2^*(6)(-609 + 609) = 0,$$

$$t^\vee_{2,2,3}(10) = 32(114)h_2^*(7) +$$
$$270(8)h_2^*(6) + 32(36)h_2^*(5) + 8(66)h_2^*(4) + 8(24)h_2^*(3) +$$
$$48h_2^*(2) - 48t^{**}_{2,1,6}(6) = 48(76)h_2^*(7) +$$
$$(44)48h_2^*(6) + 48(20)h_2^*(5) + 48(5)h_2^*(4) -$$
$$t^{**}_{2,1,4}(8) = 48(36)h_2^*(7) + (14)48h_2^*(6) = -(76)48,$$

$$t^\wedge_{2,2,3}(10) = 32(114)h_2^*(7) + 8(304)h_2^*(6) +$$
$$(32)19h_2^*(5) = (76)48 + 32(76)h_2^*(6) + (32)19(-4)h_2^*(6)$$

$$t^*_{2,2,3}(10) = t^\vee_{2,2,3}(10) +$$
$$t^\wedge_{2,2,3}(10) = (-76 + 76)48 = 0,$$

$$t^\vee_{2,2,4}(10) = 32(83)h_2^*(7) +$$
$$186(8)h_2^*(6) + 32(23)h_2^*(5) + 8(38)h_2^*(4) + 8(12)h_2^*(3) +$$
$$16h_2^*(2) - 32h_2^*(1) + 32t^{**}_{2,1,7}(5) = 32(83)h_2^*(7) +$$
$$186(8)h_2^*(6) + 32(24)h_2^*(5) + 8(54)h_2^*(4) + 8(36)h_2^*(3) +$$
$$16(9)h_2^*(2) - 8(9)t^{**}_{2,1,6}(6) = 32(83)h_2^*(7) +$$
$$177(8)h_2^*(6) + 32(15)h_2^*(5) + 8(9)h_2^*(2),$$

$$t^{\wedge}_{2,2,4}(10) = 32(83)h^*_2(7)+$$
$$8(-642)h^*_2(6) + (32)(-202)h^*_2(5) + 8(-259)h^*_2(4),$$

$$t^{*}_{2,2,4}(10) = 8h^*_2(6)(-548 + 187(16) - 259(11) + 405) =$$
$$8h^*_2(6)(-143 + 2992 - 2849) = 8h^*_2(6)(-143 + 143) = 0,$$

$$t^{\vee}_{2,2,5}(10) = 32(-101)h^*_2(7)+$$
$$(-253)8h^*_2(6) + (-36)32h^*_2(5) + 8(-71)h^*_2(4) + 8(-28)h^*_2(3)+$$
$$(-9)8h^*_2(2) - 64h^*_2(1) + 64t^{**}_{2,1,7}(5) =$$
$$32(-101)h^*_2(7)+$$
$$(-253)8h^*_2(6) + (-34)32h^*_2(5) + 8(-39)h^*_2(4) + 8(20)h^*_2(3)+$$
$$(23)8h^*_2(2) - (23)8t^{**}_{2,1,6}(6) =$$
$$32(-101)h^*_2(7)+$$
$$(-276)8h^*_2(6) + (-57)32h^*_2(5) + 8(-177)h^*_2(4) + 32(-18)h^*_2(3),$$

$$t^{\wedge}_{2,2,5}(10) = 32(-101)h^*_2(7) + 8(-996)h^*_2(6)+$$
$$(32)(-11)h^*_2(5) + 8(682)h^*_2(4) + (300)8h^*_2(3),$$

$$t^{*}_{2,2,5}(10) = 8(101)h^*_2(6) + 8(-1272)h^*_2(6)+$$
$$(32)(68)4h^*_2(6) + 440(101)h^*_2(6) - 32(57)(24)h^*_2(6) =$$
$$448(101)h^*_2(6) - 96(101)h^*_2(6)+$$
$$32(272 - 15 - 57(24))h^*_2(6) = (101)352h^*_2(6)-$$
$$32(272 - 15 - 114 - (114)11)(101)h^*_2(6) = ((101)352 - 32(101)11)h^*_2(6) = 0,$$

$$t^{\vee}_{2,2,6}(10) = 32(-70)h^*_2(7)+$$
$$(-169)8h^*_2(6) + (-23)32h^*_2(5) + 8(-43)h^*_2(4) + 8(-16)h^*_2(3)+$$
$$(-5)8h^*_2(2) - 32h^*_2(1) + 32t^{**}_{2,1,7}(5) =$$
$$t^{\vee}_{2,1,5}(10) + 8(7)h^*_2(0) =$$
$$-(609)8h^*_2(6) + (833)8h^*_2(6) = (224)8h^*_2(6),$$

$$t^{\wedge}_{2,2,6}(10) = 32(-70)h^*_2(7) + 8(-169)h^*_2(6)+$$
$$(32)(91)h^*_2(5) + 8(227)h^*_2(4) + (-176)8h^*_2(3)+$$
$$8(-119)h^*_2(2) =$$
$$8h^*_2(6)(-169 + 35 - 1456 + 11(227 + 16(24)) - (119)45) =$$
$$8h^*_2(6)(-1625 + 80 + 11(384 + 227) - 5400) =$$
$$-8h^*_2(6)(7025 - 11(611) - 80) = -(224)8h^*_2(6)$$

$$t^*_{2,2,6}(10) = 8h^*_2(6)(224 - 224) = 0,$$

$$t^\vee_{2,3,4}(10) = 32(45)h^*_2(7)+$$
$$(96)8h^*_2(6) + (32)11h^*_2(5) + 8(16)h^*_2(4) + 32h^*_2(3)-$$
$$32t^{\wedge\wedge}_{2,1,5}(7) = 32(45)h^*_2(7) + (20)32h^*_2(6)+$$
$$(32)5(-4)h^*_2(6) = 32(45)h^*_2(7),$$

$$t^\wedge_{2,3,4}(10) = 32(45)h^*_2(7)+$$
$$8(270)h^*_2(6) + (32)(45)h^*_2(5) + 8(45)h^*_2(4),$$

$$t^*_{2,3,4}(10) =$$
$$360(8h^*_2(7) + 6h^*_2(6) + 4h^*_2(5) + h^*_2(4) =$$
$$360t^{**}_{2,1,4}(8) = 0$$

$$t^\vee_{2,3,5}(10) = 32(96)h^*_2(7)+$$
$$(203)8h^*_2(6) + (32)23h^*_2(5) + 8(33)h^*_2(4) + 64h^*_2(3)-$$
$$8h^*_2(2) + 8t^{**}_{2,1,6}(6) = 32(96)h^*_2(7)+$$
$$(204)8h^*_2(6) + (32)24h^*_2(5) + (39)8h^*_2(4) + (8)12h^*_2(3),$$

$$t^\wedge_{2,3,5}(10) = 32(96)h^*_2(7) + 8(186)h^*_2(6)+$$
$$(32)(-99)h^*_2(5) + 8(-489)h^*_2(4) - (156)8h^*_2(3),$$

$$t^*_{2,3,5}(10) =$$
$$8h^*_2(6)(294 + 1200 - (450)11 + (144)24) =$$
$$8h^*_2(6)(150 + 1200 - 4950 + 3600) = 0,$$

$$t^\vee_{2,3,6}(10) = 32(57)h^*_2(7)+$$
$$(118)8h^*_2(6) + (32)13h^*_2(5) + (8)18h^*_2(4) + 32h^*_2(3)-$$
$$16h^*_2(2) + 16h^*_2(2)t^{**}_{2,1,6}(6) = 32(57)h^*_2(7)+$$
$$(120)8h^*_2(6) + 32(15)h^*_2(5) + (8)30h^*_2(4) + (8)12h^*_2(3)-$$
$$(8)12t^{\wedge\wedge}_{2,1,5}(7) = 32(57)h^*_2(7) + (72)8h^*_2(6)-$$
$$8(12)h^*_2(5) - (8)18h^*_2(4),$$

$$t^\wedge_{2,3,6}(10) = 32(57)h^*_2(7) + 8(-253)h^*_2(6)+$$
$$(32)(-148)h^*_2(5) + 8(-3)h^*_2(4)+$$
$$(428)8h^*_2(3) + (185)8h^*_2(2) - 8(185)t^{**}_{2,1,6}(6) =$$

$$32(57)h_2^*(7)+8(-438)h_2^*(6)+32(-333)h_2^*(5)+$$
$$8(-1113)h_2^*(4)-8(312)h_2^*(3)=$$
$$96(19)h_2^*(7)+24(-146)h_2^*(6)+96(-111)h_2^*(5)+$$
$$24(-371)h_2^*(4)-24(104)h_2^*(3)+24(104)t^{\wedge\wedge}_{2,1,5}(7)=$$
$$(96)19h_2^*(7)+24(270)h_2^*(6)+24(180)h_2^*(5)+$$
$$24(45)h_2^*(4)-24(45)t^{**}_{2,1,4}(8)=-96(71)h_2^*(7),$$

$$t^*_{2,3,6}(10)=32(-156)h_2^*(7)+(72)8h_2^*(6)-$$
$$8(12)h_2^*(5)-(8)18h_2^*(4)=8h_2^*(6)(78+72+48-198)=0,$$

$$t^{\vee}_{2,3,7}(10)=32(6)h_2^*(7)+$$
$$(11)8h_2^*(6)+32h_2^*(5)+8h_2^*(4)$$
$$-8h_2^*(2),$$

$$t^{\wedge}_{2,3,7}(10)=32(6)h_2^*(7)+8(-169)h_2^*(6)+$$
$$(32)(-23)h_2^*(5)+8(227)h_2^*(4)+$$
$$(128)8h_2^*(3)+(-119)8h_2^*(2)-(76)8h_2^*(1),$$

$$t^*_{2,3,7}(10)=-8(164)h_2^*(6)+32(-22)h_2^*(5)+$$
$$8(228)h_2^*(4)+(128)8h_2^*(3)+(-120)8h_2^*(2)-(76)8h_2^*(1)=$$
$$-32(41)h_2^*(6)+32(-22)h_2^*(5)+32(57)h_2^*(4)+$$
$$32(32)h_2^*(3)+(-30)(32)h_2^*(2)-(19)32h_2^*(1)+$$
$$(19)32t^{**}_{2,1,7}(5)=-(32)41h_2^*(6)+(32)(-3)h_2^*(5)+$$
$$(32)133h_2^*(4)+(146)32h_2^*(3)+(46)32h_2^*(2)-$$
$$(46)32t^{**}_{2,1,7}(6)=-32(87)h_2^*(6)+$$
$$32(-187)h_2^*(5)-32(143)h_2^*(4)-32(38)h_2^*(3)=$$
$$32h_2^*(6)(-87+736-(143)11+(38)24$$
$$32h_2^*(6)(-87+748-1573+(38)24)$$
$$32h_2^*(6)(+748-1660+912)=0.$$

We continue this test in the next part.

§3.2. Corrections in the previous parts of this paper.

In the equality (3) of the part 1 must stand $f^{\vee}_{l,2}(z;\nu)$ instead of $f_{l,2}(z;\nu)^{\vee}$. The equality (6) in the second part must have the form

$$f_{l,5}(z,\nu)=$$
$$2^{-1}(\log(z))^2 f_{l,2}(z,\nu)+(\log(z))f_{l,4}(z,\nu)+f_{l,6}(z,\nu)=$$
$$=-2^{-1}(\log(z))^2 f_{l,2}(z,\nu)+(\log(z))f_{l,3}(z,\nu)+f_{l,6}(z,\nu),$$

instead of

$$f_{l,5}(z,\nu)=$$
$$2^{-1}(\log(z))^2 f_{l,2}(z,\nu)+(\log(z))f_{l,4}(z,\nu)+f_{l,6}(z,\nu)=$$
$$=-2^{-1}(\log(z))^2 f_{l,2}(z,\nu)++(\log(z))f_{l,3}(z,\nu)+f_{l,6}(z,\nu),$$

The equality (33) in the second part must have the form

$$(-\nu)^{3+2l}X_{l,k}(z;\nu)=A^*_l(z;-\nu)X_{l,k}(z;\nu-1),$$

instead of

$$(-\nu)^{3+2l}X^{\wedge}_{l,k}(z;\nu)=A^*_l(z;-\nu)X^{\wedge}_{l,k}(z;\nu+1).$$

The equality (34) in the second part must have the form

$$-\nu^{6+4l}E_{4+2l}=A^*_l(z;\nu)A^*_l(z;-\nu),$$

were E_{4+2l} is $(4+2l)\times(4+2l)$ unit matrix instead of

$$-\nu^{6+4l}E_{3+2l}=A^*_l(z;\nu)A^*_l(z;-\nu),$$

were E_{3+2l} is $(3+2l)\times(3+2l)$ unit matrix Instead of

$$a^{\vee}_{0,2,2}(z;\nu)=(1/2)(-1-19\mu+(z-1)(-16)),$$

in the second part must stand

$$a^{\vee}_{0,2,2}(z;\nu)=(1/2)(-1-19\mu+(z-1)(-16\mu)),$$

. The equalities

$$R^{\vee}_0(0)=\begin{pmatrix}-5&0&24&0\\-4&-1&8&0\\-4&-4&3&0\\-4&-8&-4&-1\end{pmatrix},\ V^{\vee}_0(0)=\begin{pmatrix}-4&4&32&24\\-4&0&12&8\\-4&-4&4&4\\-4&-8&-4&0\end{pmatrix},$$

must stand in the Part 2 instead of

$$R^{\vee}_0(0)=\begin{pmatrix}-5&0&24&0\\-4&-1&8&0\\-4&-4&3&0\\-4&-8&-4&-1\end{pmatrix},\ V^{\vee}_0(0)=\begin{pmatrix}-4&4&32&24\\-4&-4&12&8\\-4&0&4&4\\-4&-8&-4&0\end{pmatrix}.$$

The equalities

$$R^{\wedge}_0(1)=\begin{pmatrix}17&0&0&0\\16&17&0&0\\16&16&1&0\\16&24&8&1\end{pmatrix},\ V^{\wedge}_0(1)=\begin{pmatrix}16&0&0&0\\16&16&0&0\\16&16&0&0\\16&24&8&0\end{pmatrix}$$

must stand in the Part 2 instead of

$$R_0^{\wedge}(1)=\begin{pmatrix}17&0&0&0\\4&1&-8&0\\16&16&1&0\\16&24&8&1\end{pmatrix},\ V_0^{\wedge}(1)=\begin{pmatrix}16&16&0&0\\16&16&0&0\\16&16&0&0\\16&24&8&0\end{pmatrix}.$$

The equality $a_{0,2,4}=-8(z-1)$ must stand in the Part 2 instead of $a_{0,2,4}=8(z-1)$. The equality

$$V_1^{\wedge}(0)=\begin{pmatrix}8&-12&18&104&66&0\\8&-4&6&122&170&66\\8&4&2&62&94&38\\8&12&6&26&42&18\\8&20&18&14&14&6\\8&28&38&26&10&2\end{pmatrix},$$

must stand in the Part 2 instead of

$$V_1^{\wedge}(0)=\begin{pmatrix}8&-12&18&104&66&0\\8&-4&6&122&170&0\\8&12&6&26&42&18\\8&12&6&25&36&0\\8&20&18&14&14&6\\8&28&38&26&10&2\end{pmatrix}.$$

The equality

$$a_{1,1,5}^{\vee}(z;\nu)=(1/2)(-408+(z-1)(-474)),$$

must stand in the Part 2 instead of

$$a_{1,1,5}^{\vee}(z;\nu)=(1/2)(-408+(z-1)(-474\mu)),$$

The equality

$$V_1^{\vee}(1)=\begin{pmatrix}-76&144&756&536&0&0\\-76&68&288&68&-76&0\\-76&-8&158&-40&-206&-76\\-76&-84&36&-34&-132&-54\\-76&-160&-102&-52&-58&-24\\-76&-236&-280&-166&-56&-10\end{pmatrix}$$

must stand in the Part 2 instead of

$$V_1^{\vee}(1)=\begin{pmatrix}-76&144&756&536&-474&0\\-76&68&288&68&-76&0\\-76&-8&158&-40&-206&-76\\-76&-84&36&-34&-132&-54\\-76&-160&-102&-52&-58&-24\\-76&-236&-280&-166&-56&-10\end{pmatrix}.$$

The equality

$$R_2^\vee(0) = \begin{pmatrix} -17 & 24 & -88 & 0 & 2872 & 6928 & 5712 & 0 \\ -16 & 15 & -32 & 0 & 1160 & 2544 & 1824 & 0 \\ -16 & 0 & -9 & 0 & 640 & 1464 & 1080 & 0 \\ -16 & -16 & -8 & -1 & 312 & 752 & 576 & 0 \\ -16 & -32 & -24 & -8 & 127 & 328 & 264 & 0 \\ -16 & -48 & -56 & -32 & 32 & 111 & 96 & 0 \\ -16 & -64 & -104 & -88 & -32 & 16 & 23 & 0 \\ -16 & -80 & -168 & -192 & -128 & -48 & -8 & -1 \end{pmatrix},$$

must stand in the Part 2 instead of

$$R_2^\vee(0) = \begin{pmatrix} -17 & 24 & -88 & 0 & 2872 & 6928 & 5712 & 0 \\ -16 & 15 & -32 & 0 & 1160 & 2544 & 1824 & 0 \\ -16 & 80 & -9 & 0 & 640 & 1464 & 1080 & 0 \\ -16 & -16 & -8 & -1 & 312 & 752 & 576 & 0 \\ -16 & -32 & -24 & -8 & 127 & 328 & 264 & 0 \\ -16 & -48 & -56 & -32 & 32 & 111 & 96 & 0 \\ -16 & -64 & -104 & -88 & -32 & 16 & 23 & 0 \\ -16 & -80 & -168 & -192 & -128 & -48 & -8 & -1 \end{pmatrix}.$$

The equality

$$V_1^\wedge(0) = \begin{pmatrix} 8 & -12 & 18 & 104 & 66 & 0 \\ 8 & -4 & 6 & 122 & 170 & 66 \\ 8 & 4 & 2 & 62 & 94 & 38 \\ 8 & 12 & 6 & 26 & 42 & 18 \\ 8 & 20 & 18 & 14 & 14 & 6 \\ 8 & 28 & 38 & 26 & 10 & 2 \end{pmatrix},$$

must stand in the Part 2 instead of

$$V_1^\wedge(0) = \begin{pmatrix} 8 & -12 & 18 & 104 & 66 & 0 \\ 8 & -4 & 6 & 122 & 170 & 0 \\ 8 & 12 & 6 & 26 & 42 & 18 \\ 8 & 12 & 6 & 25 & 36 & 0 \\ 8 & 20 & 18 & 14 & 14 & 6 \\ 8 & 28 & 38 & 26 & 10 & 2 \end{pmatrix}.$$

The equality

$$R_1^\vee(4) = V_1^\vee(4) = \begin{pmatrix} 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ -76 & 0 & 0 & 0 & 0 & 0 \\ -130 & -76 & 0 & 0 & 0 & 0 \\ -154 & -170 & -40 & 0 & 0 & 0 \end{pmatrix},$$

must stand in the Part 2 instead of

$$R_1^\vee(4) = V_1^\vee(4) = \begin{pmatrix} 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ -76 & 0 & 0 & 0 & 0 & 0 \\ -130 & -76 & 0 & 0 & 0 & 0 \\ 154 & -170 & -40 & 0 & 0 & 0 \end{pmatrix},$$

The equality

$$R_2^\vee(0) = \begin{pmatrix} -17 & 24 & -88 & 0 & 2872 & 6928 & 5712 & 0 \\ -16 & 15 & -32 & 0 & 1160 & 2544 & 1824 & 0 \\ -16 & 0 & -9 & 0 & 640 & 1464 & 1080 & 0 \\ -16 & -16 & -8 & -1 & 312 & 752 & 576 & 0 \\ -16 & -32 & -24 & -8 & 127 & 328 & 264 & 0 \\ -16 & -48 & -56 & -32 & 32 & 111 & 96 & 0 \\ -16 & -64 & -104 & -88 & -32 & 16 & 23 & 0 \\ -16 & -80 & -168 & -192 & -128 & -48 & -8 & -1 \end{pmatrix},$$

must stand in the Part 2 instead of

$$R_2^\vee(0) = \begin{pmatrix} -17 & 24 & -88 & 0 & 2872 & 6928 & 5712 & 0 \\ -16 & 15 & -32 & 0 & 1160 & 2544 & 1824 & 0 \\ -16 & 80 & -9 & 0 & 640 & 1464 & 1080 & 0 \\ -16 & -16 & -8 & -1 & 312 & 752 & 576 & 0 \\ -16 & -32 & -24 & -8 & 127 & 328 & 264 & 0 \\ -16 & -48 & -56 & -32 & 32 & 111 & 96 & 0 \\ -16 & -64 & -104 & -88 & -32 & 16 & 23 & 0 \\ -16 & -80 & -168 & -192 & -128 & -48 & -8 & -1 \end{pmatrix}.$$

The equality

$$R_2^\vee(1) = \begin{pmatrix} -215 & 448 & -1120 & -11488 & -16944 & -7616 & 0 & 0 \\ -208 & 281 & -512 & -4640 & -5008 & -992 & 0 & 0 \\ -208 & 80 & -183 & -2560 & -2000 & 1872 & 2160 & 0 \\ -208 & -128 & -96 & -1255 & -800 & 1664 & 1728 & 0 \\ -208 & -336 & -224 & -576 & -279 & 1024 & 1056 & 0 \\ -208 & -544 & -560 & -448 & -144 & 441 & 480 & 0 \\ -208 & -752 & -1104 & -880 & -368 & 48 & 137 & 0 \\ -208 & -960 & -1856 & -1952 & -1200 & -416 & -64 & -7 \end{pmatrix},$$

must stand in the Part 2 instead of

$$R_2^\vee(1) = \begin{pmatrix} -215 & 448 & -1120 & -11488 & 16944 & -7616 & 0 & 0 \\ -208 & 281 & -512 & -4640 & -5008 & -992 & 0 & 0 \\ -208 & 80 & -183 & -2560 & -2000 & 1872 & 2160 & 0 \\ -208 & -128 & -96 & -1225 & -800 & 1664 & 1728 & 0 \\ -208 & -336 & -224 & -576 & -279 & 1024 & 1256 & 0 \\ -208 & -544 & -560 & -448 & -144 & 441 & 480 & 0 \\ -208 & -752 & -1104 & -880 & -368 & 48 & 137 & 0 \\ -208 & -960 & -1856 & -1952 & -1200 & -416 & -64 & -7 \end{pmatrix}.$$

The equality

$$V_2^\vee(1) = \begin{pmatrix} -208 & 496 & -960 & -11136 & -16368 & -6896 & 0 & 0 \\ -208 & 288 & -464 & -4480 & -4656 & -416 & 720 & 0 \\ -20e8 & 80 & -176 & -2512 & -1840 & 2224 & 2736 & 720 \\ -288 & -128 & -96 & -1248 & -752 & 1824 & 2080 & 576 \\ -208 & -336 & -224 & -576 & -272 & 1072 & 1216 & 352 \\ -208 & -544 & -560 & -448 & -144 & 448 & 528 & 160 \\ -208 & -752 & -1104 & -880 & -368 & 48 & 144 & 48 \\ -208 & -960 & -1856 & -1952 & -1200 & -416 & -64 & 0 \end{pmatrix},$$

must stand in the Part 2 instead of

$$V_2^{\vee}(1) = \begin{pmatrix} -208 & 496 & -960 & -11136 & 16368 & -6896 & 0 & 0 \\ -208 & 288 & -464 & -4480 & -4656 & -416 & 720 & 0 \\ -208 & 80 & -176 & -2512 & -1840 & 2244 & 2736 & 720 \\ -288 & -128 & -96 & -1248 & -752 & 1824 & 2080 & 576 \\ -208 & -336 & -224 & -576 & -272 & 1072 & 1216 & 352 \\ -208 & -544 & -560 & -448 & -144 & 448 & 528 & 160 \\ -208 & -752 & -1104 & -880 & -368 & 48 & 144 & 48 \\ -208 & -960 & -1856 & -1952 & -1200 & -416 & -64 & 0 \end{pmatrix}.$$

The equality

$$R_2^{\vee}(2) = \begin{pmatrix} -1062 & 2912 & 12592 & 8544 & 0 & 0 & 0 & 0 \\ -1048 & 1992 & 4240 & -1536 & -2880 & 0 & 0 & 0 \\ -1048 & 888 & 2856 & -4432 & -7888 & -2880 & 0 & 0 \\ -1048 & -160 & 1328 & -3214 & -5680 & -1952 & 0 & 0 \\ -1048 & -1208 & 16 & -1872 & -3062 & -560 & 528 & 0 \\ -1048 & -2256 & -1720 & -1504 & -1400 & -30 & 480 & 0 \\ -1048 & -3304 & -4168 & -2968 & -1336 & -136 & 202 & 0 \\ -1048 & -4352 & -7520 & -7040 & -3848 & -1184 & -160 & -14 \end{pmatrix},$$

must stand in the Part 2 instead of corresponding equality written there.

The equality

$$V_2^{\wedge}(3) = \begin{pmatrix} 1408 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 1408 & 1408 & 0 & 0 & 0 & 0 & 0 & 0 \\ 1408 & 384 & -1024 & 0 & 0 & 0 & 0 & 0 \\ 1408 & 352 & -2080 & -1024 & 0 & 0 & 0 & 0 \\ 1408 & 992 & -1344 & -800 & 128 & 0 & 0 & 0 \\ 1408 & 2048 & 352 & -32 & 384 & 128 & 0 & 0 \\ 1408 & 3328 & 2848 & 1344 & 544 & 128 & 0 & 0 \\ 1408 & 4704 & 6336 & 4480 & 1792 & 384 & 32 & 0 \end{pmatrix},$$

must stand in the Part 2 instead of instead of corresponding equality written there.

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