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DEPT: COMPUTER ENGINEERING

$$\bar{T}_1 + \bar{T}_2 - 2\bar{T}_3 + \bar{T}_4 + 3\bar{T}_5 - \bar{T}_6 = 4$$

$$2\bar{T}_1 + \bar{T}_2 + \bar{T}_3 + 2\bar{T}_4 + \bar{T}_5 - 3\bar{T}_6 = 20$$

$$\bar{T}_1 + 3\bar{T}_2 - 3\bar{T}_3 - \bar{T}_4 + 2\bar{T}_5 + \bar{T}_6 = -15$$

$$5\bar{T}_1 + 2\bar{T}_2 - \bar{T}_3 - \bar{T}_4 + 2\bar{T}_5 + \bar{T}_6 = -5$$

$$-3\bar{T}_1 - \bar{T}_2 + 2\bar{T}_3 + 3\bar{T}_4 + \bar{T}_5 + 3\bar{T}_6 = 16$$

$$4\bar{T}_1 + 3\bar{T}_2 + \bar{T}_3 - 6\bar{T}_4 - 3\bar{T}_5 - 2\bar{T}_6 = -27$$

Solution

1	1	-2	1	3	-1	\bar{T}_1	4
2	-1	1	2	1	-3	\bar{T}_2	20
1	3	-3	-1	2	1	\bar{T}_3	-15
5	2	-1	-1	2	1	\bar{T}_4	-5
-3	-1	2	3	1	3	\bar{T}_5	16
4	3	1	6	-3	-2	\bar{T}_6	-27

$$\bar{T}_1 = 2$$

$$\bar{T}_2 = 1$$

$$\bar{T}_3 = 5$$

$$\bar{T}_4 = -3$$

$$\bar{T}_5 = 4$$

1	1	-2	1	3	-1	\bar{T}_1
2-2(1)	-1-2(1)	1-2(-2)	2-2(1)	1-2(3)	-3-2(-1)	\bar{T}_2
1-1(1)	3-1(1)	-3-1(-2)	-1-1(1)	2-1(3)	1-1(-1)	\bar{T}_3
5-5(1)	2-5(1)	-1-5(-2)	-1-5(1)	2-5(3)	1-5(-1)	\bar{T}_4
-3+3(1)	-1+3(1)	2+3(-2)	3+3(1)	1+3(3)	3+3(-1)	\bar{T}_5
4-4(1)	3-4(1)	1+4(-2)	-6-4(1)	-3-4(3)	-2-4(-1)	\bar{T}_6

4

- 20 - 2(4)
- 15 - 1(4)
- 3 - 5(4)
- 16 + 3(4)
- 27 - 4(4)

1	1	-2	1	3	-1	\bar{T}_1	4
0	-3	5	0	-5	-1	\bar{T}_2	12
0	2	-1	-2	-1	2	\bar{T}_3	-19
0	-3	9	-6	-13	6	\bar{T}_4	-23
0	2	-4	6	10	0	\bar{T}_5	128
0	-1	9	10	-5	2	\bar{T}_6	43

$\bar{T}_1 = -2/3$

$\bar{T}_2 = -1$

$\bar{T}_3 = -2/3$

$\bar{T}_4 = 1/3$

1	2	-2	1	3	-1	\bar{T}_1	4
0	-3	5	0	-5	-1	\bar{T}_2	12
0	$2 + 2/3(-3)$	$-1 + 2/3(5)$	$-2 + 2/3(0)$	$-1 + 2/3(-5)$	$2 + 2/3(-1)$	\bar{T}_3	$-19 + 2/3(12)$
0	$-3 + 1(-3)$	$9 - 1(5)$	$-6 + 1(0)$	$-13 + 1(-5)$	$6 - 1(-1)$	\bar{T}_4	$-23 - 1(12)$
0	$2 + 1/3(-3)$	$4 + 1/3(5)$	$6 + 1/3(0)$	$10 + 1/3(-5)$	$0 + 1/3(-1)$	\bar{T}_5	$28 + 1/3(12)$
0	$-1 - 1/3(-3)$	$9 - 1/3(5)$	$-6 + 1/3(0)$	$-15 - 1/3(-5)$	$2 - 1/3(-1)$	\bar{T}_6	$-43 - 1/3(12)$

1	1	-2	1	3	-1	\bar{T}_1	4
0	-3	5	0	-5	-1	\bar{T}_2	12
0	0	$7/3$	-2	$-13/3$	$4/3$	\bar{T}_3	-11
0	0	4	-6	-8	7	\bar{T}_4	-35
0	0	$-2/3$	6	$20/3$	$-2/3$	\bar{T}_5	36
0	0	$22/3$	-10	$-40/3$	$7/3$	\bar{T}_6	41

$$F_1 = 19/7$$

$$F_2 = -4/7$$

$$F_3 = 22/7$$

1	1	-2	1	3	-1	T_1	4
0	-3	5	0	-5	-1	T_2	12
0	0	$7/3$	-2	$-13/3$	$4/3$	$T_3 =$	-11
0	0	$4 - 19/7(7/3)$	$-6 - 19/7(-2)$	$-8 - 19/7(-13/3)$	$7 - 19/7(4/3)$	T_4	$-35/7(4/3)$
0	0	$-2/3 + 7/7(7/3)$	$6 + 7/7(-2)$	$20/3 + 7/7(-13/3)$	$-2/3 + 7/7(4/3)$	T_5	$6 - 9/7(4/3)$
0	0	$22/5 - 22/7(7/3)$	$-10 - 22/7(-2)$	$-40/3 - 22/7(-13/3)$	$7/3 - 22/7(4/3)$	T_6	$42 - 22/7(4/3)$

1	1	-2	1	3	-1	T_1	4
0	-3	5	0	-5	-1	T_2	12
0	0	$7/3$	-2	$-13/3$	$4/3$	$T_3 =$	-11
0	0	0	$18/7$	$-4/7$	$33/7$	T_4	$-113/7$
0	0	0	$38/7$	$58/7$	$-4/7$	T_5	$280/7$
0	0	0	$-26/7$	$2/7$	$-13/7$	T_6	$-87/7$

$$F_1 = -19/9, F_2 = 13/9$$

1	1	-2	1	3	-1	T_1	4
0	-3	5	0	-5	-1	T_2	12
0	0	$7/3$	-2	$-15/3$	$4/3$	$T_3 =$	-11
0	0	0	$-18/7$	$-4/7$	$33/7$	T_4	$-18/7$
0	0	0	$38/7 + 19/9(-18/9)$	$38/7 + 19/9(-4/7)$	$-2/7 + 19/9(33/7)$	T_5	$29/7 + 19/9(-13/9)$
0	0	0	$-26/7 + 13/9(-18/7)$	$2/9 + 13/9(-4/7)$	$-13/9 - 13/9(33/7)$	T_6	$-37/7 - 13/9(-13/9)$

1	1	-2	1	3	-1	T_1	4
0	-3	5	0	-5	-1	T_2	12
0	0	$7/3$	-2	$-13/3$	$4/3$	$T_3 =$	-11
0	0	0	$18/7$	$-4/7$	$33/7$	T_4	$-113/7$
0	0	0	$38/9$	$29/3$	$-11/9$	T_5	$-11/9$
0	0	0	$10/9$	$26/3$	$98/9$	T_6	$98/9$

$$F_1 = 5/19$$

$$\begin{bmatrix} 1 & 1 & -2 & 1 & 3 & -1 \\ 0 & -3 & 5 & 0 & -5 & -1 \\ 0 & 0 & 7/3 & -2 & -13/3 & 4/3 \\ 0 & 0 & 0 & -15/7 & -4/7 & 33/7 \\ 0 & 0 & 0 & 0 & 38/9 & 29/3 \\ 0 & 0 & 0 & 0 & 10/9 & -5/9(38/9) \end{bmatrix} \begin{bmatrix} \bar{T}_1 \\ \bar{T}_2 \\ \bar{T}_3 \\ \bar{T}_4 \\ \bar{T}_5 \\ \bar{T}_6 \end{bmatrix} = \begin{bmatrix} 4 \\ 12 \\ -11 \\ -113/7 \\ -11/9 \\ 98/9 - 5/9(-14/9) \end{bmatrix}$$

$$\begin{bmatrix} 1 & 1 & -2 & 1 & 3 & -1 \\ 0 & -3 & 5 & 0 & -5 & -1 \\ 0 & 0 & 7/3 & -2 & -13/3 & 4/3 \\ 0 & 0 & 0 & -18/7 & -4/7 & 33/7 \\ 0 & 0 & 0 & 0 & 38/9 & 29/3 \\ 0 & 0 & 0 & 0 & 0 & 213/9 \end{bmatrix} \begin{bmatrix} \bar{T}_1 \\ \bar{T}_2 \\ \bar{T}_3 \\ \bar{T}_4 \\ \bar{T}_5 \\ \bar{T}_6 \end{bmatrix} = \begin{bmatrix} 4 \\ 12 \\ -11 \\ -113/7 \\ -11/9 \\ 213/9 \end{bmatrix}$$

$$-213/9 \bar{T}_6 = 213/19$$

$$\bar{T}_6 = \frac{213}{19} \times \frac{-19}{213} = -1$$

$$\frac{38}{9} \bar{T}_5 + \frac{29}{3} \bar{T}_6 = \frac{-11}{9}$$

$$\bar{T}_5 = \left(\frac{-11}{9} + \frac{29}{3} \right) \times \frac{9}{38}$$

$$= 2$$

$$\bar{T}_4 = \left(\frac{-113}{7} + \frac{8}{7} + \frac{33}{7} \right) \times \frac{-7}{18} = 4$$