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16 LENG021034

Computer engineering

ENG 382

MARCH, 19

Assignment III

$$T_1 + T_2 - 2T_3 + T_4 + 3T_5 - T_6 = 4$$

$$2T_1 - T_2 + T_3 + 2T_4 + T_5 - 3T_6 = 20$$

$$T_1 + 3T_2 - 3T_3 - T_4 + 2T_5 + T_6 = -15$$

$$5T_1 + 2T_2 - T_3 + T_4 + 2T_5 + T_6 = -3$$

$$-3T_1 - T_2 + 2T_3 + 3T_4 + T_5 + 3T_6 = 16$$

$$4T_1 + 3T_2 + T_3 - 6T_4 - 3T_5 - 2T_6 = -27$$

	1	1	-2	1	3	-1	4
$\frac{2}{1}$	2	-1	1	2	1	-3	20
$\frac{1}{1}$	1	3	-3	-1	2	1	-15
$\frac{5}{1}$	5	2	-1	-1	2	1	-3
$\frac{-3}{1}$	-3	-1	2	3	1	3	16
$\frac{4}{1}$	4	3	1	-6	-3	-2	-27

	1	1	-2	1	3	-1	4
	$(2 - \frac{2}{1} \times 1)$	$(-1 - \frac{1}{1} \times 1)$	$(1 - \frac{2}{1} \times -2)$	$(2 - \frac{1}{1} \times 1)$	$(1 - \frac{3}{1} \times 3)$	$(-3 - \frac{-1}{1} \times -1)$	$(20 - \frac{2}{1} \times 4)$
	$(1 - 1 \times 1)$	$(3 - 1 \times 1)$	$(-3 - 1 \times -2)$	$(-1 - 1 \times 1)$	$(2 - 1 \times 3)$	$(1 - 1 \times -1)$	$(-15 - 1 \times 4)$
	$(5 - 5 \times 1)$	$(2 - 5 \times 1)$	$(-1 - 5 \times -2)$	$(-1 - 5 \times 1)$	$(2 - 5 \times 3)$	$(1 - 5 \times -1)$	$(-3 - 5 \times 4)$
	$(-3 + 3 \times 1)$	$(-1 + 3 \times 1)$	$(2 + 3 \times -2)$	$(3 + 3 \times 1)$	$(1 + 3 \times 3)$	$(3 + 3 \times -1)$	$(16 + 3 \times 4)$
	$(4 - 4 \times 1)$	$(3 - 4 \times 1)$	$(1 - 4 \times -2)$	$(-6 - 4 \times 1)$	$(-3 - 4 \times 3)$	$(-2 - 4 \times -1)$	$(-27 - 4 \times 4)$

	1	1	-2	1	3	-1	4
	0	-3	5	0	-5	-1	12
$\frac{2}{3}$	0	2	-1	-2	-1	2	-19
1	0	-3	9	-6	-13	6	-23
$-\frac{2}{3}$	0	2	-4	6	10	0	28
$\frac{1}{3}$	0	-1	9	10	-15	2	-43

	1	1	-2	1	3	-1	4
	0	-3	5	0	-5	-1	12
0	$(2 + \frac{2}{3} \times 3)$	$(-1 + \frac{1}{3} \times 5)$	$(-2 + \frac{2}{3} \times 0)$	$(-1 + \frac{2}{3} \times -5)$	$(2 + \frac{2}{3} \times -1)$	$(-19 + \frac{2}{3} \times 12)$	
0	$(-3 - 1 \times -3)$	$(9 - 1 \times 5)$	$(-6 - 1 \times 0)$	$(-13 - 1 \times -5)$	$(6 - 1 \times -1)$	$(-23 - 1 \times 12)$	
0	$(2 + \frac{2}{3} \times -3)$	$(-4 + \frac{2}{3} \times 5)$	$(6 + \frac{2}{3} \times 0)$	$(10 + \frac{2}{3} \times -5)$	$(0 + \frac{2}{3} \times -1)$	$(28 + \frac{2}{3} \times 12)$	
0	$(-1 - \frac{1}{3} \times -3)$	$(9 - \frac{1}{3} \times 5)$	$(-10 - \frac{1}{3} \times 0)$	$(-15 - \frac{1}{3} \times -5)$	$(2 - \frac{1}{3} \times -1)$	$(-43 - \frac{1}{3} \times 12)$	

$$\begin{array}{l}
 \frac{4}{2.33} \\
 \frac{-0.67}{2.33} \\
 \frac{7.33}{2.33}
 \end{array}
 \begin{array}{c}
 1 \\
 0 \\
 0 \\
 0 \\
 0 \\
 0
 \end{array}
 \begin{array}{c}
 1 \\
 -3 \\
 0 \\
 0 \\
 0 \\
 0
 \end{array}
 \begin{array}{c}
 -2 \\
 5 \\
 \boxed{2.33} \\
 4 \\
 -0.67 \\
 7.33
 \end{array}
 \begin{array}{c}
 1 \\
 0 \\
 \boxed{-2} \\
 -6 \\
 6 \\
 -10
 \end{array}
 \begin{array}{c}
 3 \\
 -5 \\
 -4.33 \\
 -8 \\
 6.67 \\
 -13.33
 \end{array}
 \begin{array}{c}
 -1 \\
 -1 \\
 1.33 \\
 7 \\
 -0.67 \\
 2.33
 \end{array}
 \begin{array}{c}
 4 \\
 12 \\
 \boxed{-11} \\
 -35 \\
 36 \\
 -47
 \end{array}$$

$$\begin{array}{c}
 1 \\
 0 \\
 0 \\
 0 \\
 0 \\
 0
 \end{array}
 \begin{array}{c}
 1 \\
 -3 \\
 0 \\
 0 \\
 0 \\
 0
 \end{array}
 \begin{array}{c}
 -2 \\
 5 \\
 2.33 \\
 (4 - \frac{4}{2.33} \times 2.33) \\
 (-0.67 + \frac{0.67}{2.33} \times 2.33) \\
 (7.33 - \frac{7.33}{2.33} \times 2.33)
 \end{array}
 \begin{array}{c}
 1 \\
 0 \\
 -2 \\
 (-6 - \frac{4}{2.33} \times -2) \\
 (6 + \frac{0.67}{2.33} \times -2) \\
 (-10 - \frac{7.33}{2.33} \times -2)
 \end{array}
 \begin{array}{c}
 3 \\
 -5 \\
 -4.33 \\
 (-8 - \frac{4}{2.33} \times -4.33) \\
 (6.67 + \frac{0.67}{2.33} \times -4.33) \\
 (-13.33 - \frac{7.33}{2.33} \times -4.33)
 \end{array}
 \begin{array}{c}
 -1 \\
 -1 \\
 1.33 \\
 (7 - \frac{4}{2.33} \times 1.33) \\
 (-0.67 + \frac{0.67}{2.33} \times 1.33) \\
 (2.33 - \frac{7.33}{2.33} \times 1.33)
 \end{array}
 \begin{array}{c}
 4 \\
 12 \\
 -11 \\
 (-35 - \frac{4}{2.33} \times -11) \\
 (36 + \frac{0.67}{2.33} \times -11) \\
 (-47 + \frac{7.33}{2.33} \times -11)
 \end{array}$$

$$\begin{array}{l}
 \frac{-5.42}{2.56} \\
 \frac{3.70}{2.56}
 \end{array}
 \begin{array}{c}
 1 \\
 0 \\
 0 \\
 0 \\
 0 \\
 0
 \end{array}
 \begin{array}{c}
 1 \\
 -3 \\
 0 \\
 0 \\
 0 \\
 0
 \end{array}
 \begin{array}{c}
 -2 \\
 5 \\
 \boxed{2.33} \\
 0 \\
 0 \\
 0
 \end{array}
 \begin{array}{c}
 1 \\
 0 \\
 -2 \\
 \boxed{-2.56} \\
 5.42 \\
 -3.70
 \end{array}
 \begin{array}{c}
 3 \\
 -5 \\
 -4.33 \\
 -0.56 \\
 5.42 \\
 0.29
 \end{array}
 \begin{array}{c}
 -1 \\
 -1 \\
 1.33 \\
 \boxed{4.71} \\
 -0.28 \\
 -1.85
 \end{array}
 \begin{array}{c}
 4 \\
 12 \\
 -11 \\
 \boxed{-16.11} \\
 32.83 \\
 -12.39
 \end{array}$$

$$\begin{array}{c}
 1 \\
 0 \\
 0 \\
 0 \\
 0 \\
 0
 \end{array}
 \begin{array}{c}
 1 \\
 -3 \\
 0 \\
 0 \\
 0 \\
 0
 \end{array}
 \begin{array}{c}
 -2 \\
 5 \\
 2.33 \\
 0 \\
 0 \\
 0
 \end{array}
 \begin{array}{c}
 1 \\
 0 \\
 -2 \\
 (-2.56 + \frac{5.42}{2.56} \times -2.56) \\
 (5.42 + \frac{5.42}{2.56} \times -2.56) \\
 (-3.70 - \frac{3.70}{2.56} \times -2.56)
 \end{array}
 \begin{array}{c}
 3 \\
 -5 \\
 -4.33 \\
 -0.56 \\
 (5.42 + \frac{5.42}{2.56} \times -0.56) \\
 (0.29 - \frac{3.70}{2.56} \times -0.56)
 \end{array}
 \begin{array}{c}
 -1 \\
 -1 \\
 1.33 \\
 4.71 \\
 (-0.28 + \frac{5.42}{2.56} \times 4.71) \\
 (-1.85 - \frac{3.70}{2.56} \times 4.71)
 \end{array}
 \begin{array}{c}
 4 \\
 12 \\
 -11 \\
 -16.11 \\
 (32.83 + \frac{5.42}{2.56} \times -16.11) \\
 (-12.39 - \frac{3.70}{2.56} \times -16.11)
 \end{array}$$

$$\begin{bmatrix} 1 & 1 & -2 & 1 & 3 & -1 & 4 \\ 0 & -3 & 5 & 0 & -5 & -1 & 12 \\ 0 & 0 & 2.33 & -2 & -4.33 & 1.33 & -11 \\ 0 & 0 & 0 & -2.56 & -0.56 & 4.71 & -16.11 \\ 0 & 0 & 0 & 0 & 4.23 & 9.69 & -1.27 \\ 0 & 0 & 0 & 0 & 1.09 & -8.65 & 10.89 \end{bmatrix}$$

$$\begin{bmatrix} 1 & 1 & -2 & 1 & 3 & -1 & 4 \\ 0 & -3 & 5 & 0 & -5 & -1 & 12 \\ 0 & 0 & 2.33 & -2 & -4.33 & 1.33 & -11 \\ 0 & 0 & 0 & -2.56 & -0.56 & 4.71 & -16.11 \\ 0 & 0 & 0 & 0 & 4.23 & 9.69 & -1.27 \\ \frac{1.09}{4.23} & 0 & 0 & 0 & \left(1.09 - \frac{1.09}{4.23} \times 4.23\right) & \left(-8.65 - \frac{1.09}{4.23} \times 9.69\right) & \left(10.89 - \frac{1.09}{4.23} \times -1.27\right) \end{bmatrix}$$

$$\begin{bmatrix} 1 & 1 & -2 & 1 & 3 & -1 & 4 \\ 0 & -3 & 5 & 0 & -5 & -1 & 12 \\ 0 & 0 & 2.33 & -2 & -4.33 & 1.33 & -11 \\ 0 & 0 & 0 & -2.56 & -0.56 & 4.71 & -16.11 \\ 0 & 0 & 0 & 0 & 4.23 & 9.61 & -1.27 \\ 0 & 0 & 0 & 0 & 0 & -11.14 & 11.21 \end{bmatrix}$$

$$\therefore -11.14 T_6 = 11.21$$

$$T_6 = 11.21$$

$$-11.14 = -1.00$$

$$(16.11) \quad 4.23 T_5 + 9.61 T_6 = -1.27$$

$$(-16.11) \quad 4.23 T_5 + 9.61(-1.00) = -1.27$$

$$T_5 = \frac{-1.27 + 9.61}{4.23}$$

$$= 1.9 \approx 2$$

$$-2.56T_4 - 0.56T_5 + 4.71T_6 = -16.11$$

$$-2.56T_4 - 0.56(2) + 4.71(-1) = -16.11$$

$$-2.56T_4 - 5.83 = -16.11$$

$$T_4 = \frac{-16.11 + 5.83}{-2.56}$$

$$= 4.0 //$$

$$2.33T_3 - 2T_4 - 4.33T_5 + 1.33T_6 = -11$$

$$2.33T_3 - 2(4) - 4.33(2) + 1.33(-1) = -11$$

$$2.33T_3 - 17.99 = -11$$

$$T_3 = \frac{-11 + 17.99}{2.33}$$

$$= 3 //$$

$$-3T_2 + 5T_3 + 0T_4 - 5T_5 - T_6 = 12$$

$$-3T_2 + 5(3) + 0(4) - 5(2) - (-1.0) = 12$$

$$T_2 = \frac{12 - 6}{-3}$$

$$= -2$$

$$T_1 + T_2 - 2T_3 + T_4 + 3T_5 - T_6 = 4$$

$$T_1 + (-2) - 2(3) + 4 + 3(2) + 1.0 = 4$$

$$T_1 + 3 = 4$$

$$\therefore T_1 = 4 - 3$$

$$= 1$$

$$\therefore T_1 = 1, T_2 = -2, T_3 = 3, T_4 = 4, T_5 = 2 \text{ \& } T_6 = -1.$$