

Assignment 3

$$\text{Let } T_1 = 2, T_2 = 6, T_3 = c, T_4 = d, T_5 = e, T_6 = f$$

$$a + b - 2c + d + 3e - f = 4$$

$$2a - b + c + 2d + e - 3f = 20$$

$$a + 3b - 3c - d + 2e + f = -15$$

$$5a + 2b - c - d + 2e + f = -3$$

$$-3a - b + 2c + 3d + e + 3f = 16$$

$$4a + 3b + c - 6d - 3e - 2f = -27$$

eqn 1, is the pivot equation.

$$2(a + b - 2c + d + 3e - f = 4) = 2a + 2b - 4c + 2d + 6e - 2f = 8$$

$$1(a + b - 2c + d + 3e - f = 4) = a + b - 2c + d + 3e - f = 4$$

$$5(a + b - 2c + d + 3e - f = 4) = 5a + 5b - 10c + 5d + 15e - 5f = 20$$

$$-3(a + b - 2c + d + 3e - f = 4) = -3a - 3b + 6c - 3d - 9e + 3f = -12$$

$$4(a + b - 2c + d + 3e - f = 4) = 4a + 4b - 8c + 4d + 12e - 4f = 16$$

Subtracting equations

$$2a + 2b - 4c + 2d + 6e - 2f = 8$$

$$-2a - b + c + 2d + e - 3f = 20$$

$$-3b + 5c + 0 - 5e - f = 12$$

$$a + 3b - 3c - d + 2e + f = -15$$

$$-a + b - 2c + d + 3e - f = 4$$

$$0 + 2b - c - 2d - e + 2f = -19$$

$$5a + 2b - c + d + 2e + f = -3$$

$$-5a + 5b - 10c + 5d + 15e - 5f = 20$$

$$0 - 3b + 9c - 6d - 13e + 6f = -23$$

$$-3a - b + 2c + 3d + e + 3f = 16$$

$$-3a - 3b + 6c - 3d - 9e + 3f = -13$$

$$0 + 2b - 4c + 6d + 10e - 0f = 28$$

$$4a + 3b + c - 6d - 3e - 2f = -27$$

$$-4a + 4b - 8c + 4d + 12e - 4f = 16$$

$$0 - b + 9c - 10d - 15e + 2f = -43$$

eqn (2) is now the proof

$$2/3 [-3b + 5c - 5e - f = 10] = 2b - \frac{10c}{3} + \frac{10e}{3} + \frac{2f}{3} = -8$$

$$-2/3 [-3b + 5c - 5e - f = 12] = -3b + 5c - 5e - f = 12$$

$$2/3 [-3b + 5c - 5e - f = 12] = 2b - \frac{10c}{3} + \frac{10e}{3} + \frac{2f}{3} = -8$$

$$-1/3 (-3b + 5c - 5e - f = 12) = -b + \frac{5c}{3} - \frac{5e}{3} - \frac{1f}{3} = 4$$

Subtracting eqn

$$2b - c - 2d - e + 2f = -19$$

$$-2b - \frac{10c}{3} + \frac{10e}{3} + \frac{2f}{3} = -8$$

$$\frac{7c}{3} - 2d - \frac{13e}{3} + \frac{4f}{3} = -11$$

$$-3b + 9c - 6d - 13e + 6f = -23$$

$$-3b + 5c - 5e - f = 12$$

$$4c - 6d - 8e + 7f = -35$$

$$2b - 4c + 6d + 10e = 28$$

$$-2b - \frac{10}{3}c + \frac{10}{3}e + \frac{2}{3}f = -8$$

$$-2/3 c + 6d + 20/3 e - 2/3 f = 36$$

$$-b + 9c - 10d - 15e + 2f = -43$$

$$-b + 5/3 c + 0d - 5/3 e - 1/3 f = 4$$

$$0 + 22/3 c - 10d - 40/3 e + 7/3 f = -47$$

eqn 3 is now the proof/eqn.

$$+12/7 [7/3 c - 2d - 13/3 e + 4/3 f = -11] = 4c - \frac{24}{7}d - \frac{52}{7}e + \frac{16}{7}f = -\frac{132}{7}$$

$$-2/7 (7/3 c - 2d - 13/3 e + 4/3 f = -11) = -\frac{2}{3}c + \frac{4}{7}d + \frac{26}{21}e - \frac{8}{21}f = \frac{22}{7}$$

$$22/7 (7/3 c - 2d - 13/3 e + 4/3 f = -11) = \frac{22}{3}c - \frac{44}{7}d - \frac{286}{21}e + \frac{44}{21}f = -\frac{242}{7}$$

Subtracting

$$4c - 6d - 8e + 7f = -35$$

$$-4c - \frac{24}{7}d - \frac{52}{7}e + \frac{16}{7}f = -\frac{132}{7}$$

$$0 - 2.5714d - 0.5714e + 4.7142f = -16.1429$$

$$-2/3 + 6d + 20/3e - 2/3f = 36$$

$$- [2/3c + 4/7d + 26/21e - 8/21f = 22/7]$$

$$0 + 5.42857d + 5.42857e - 0.28571f = 32.85714$$

$$22/3e - 10d - 40/3e + 7/3f = -47$$

$$- [22/3c - 44/7d - 286/21e + 88/21f = -242/7]$$

$$0 - 3.71429d + 0.285714e - 1.85714f = -12.4286$$

eqn 4 is now the point

$$-2.1111 [-2.5714d - 0.5714e + 4.71427 = -16.1429]$$

$$= 5.42857d + 1.2063e - 9.9522f = 34.0793$$

$$1.44446 (-2.5714e - 0.5714e + 4.71427 = 16.1429)$$

$$-3.71429d - 0.82536e + 6.80949f = 23.31777$$

subtracting

$$5.4285d + 5.42857e - 0.28571f = 32.85714$$

$$- (5.4285d + 1.2063e - 9.9321f = 34.0793)$$

$$4.2223e + 9.66639f = -1.2222$$

$$-3.71429d + 0.285714e - 1.85714f = 12.4286$$

$$- (-3.71429d - 0.82536e + 6.80949f = 23.31777)$$

$$0 + 7.7777e - 8.6667f = 10.8889$$

eqn 5 is proof equation

$$0.2632 (4.2223e + 9.66639f = -12.222)$$

$$\Rightarrow 1.1177e + 2.5442f = -0.32168$$

$$1.111e - 5.6667f = 10.8889$$

$$- (1.111e + 2.5442f = 0.32168)$$

$$-11.2109f = 11.2106$$

$$f = \frac{11.2106}{11.2109} = -0.9999732$$

$$\approx -1$$

$$f = -1$$

$$1.111e - 8.6667(-1) = 10.8889$$

$$e = \frac{10.8889 - 8.6667}{1.111} = 2$$

$$-3.71429d + 0.285714(2) = 1.85714(-1) = -12.4286$$

$$d = \frac{-12.4286 - 0.571428 - 1.85714}{-3.71429}$$

$$= 4$$

$$= 4$$

$$4c - 6d - 8e + 7f = -35$$

$$4c - 24 - 16 - 7 = -35$$

$$c = \frac{-35 + 47}{4} = \frac{12}{4} = 3$$

$$2b - c - 2d - e + 2f = -19$$

$$2b - 3 - 8 - 2 - 2 = -19$$

$$b = \frac{-19 + 15}{2} = \frac{-4}{2} = -2$$

$$a + b + 2c + d + 3e - f = 4$$

$$2 - 2 - 6 + 4 + 6 + 1 = 4$$

$$a = 4 - 3 = 1$$

$$a=1, b=-2, c=3, d=4, e=2, f=1$$

Therefore

$$I_1 = 1$$

$$I_2 = 2$$

$$I_3 = 3$$

$$I_4 = 4$$

$$I_5 = 2$$

$$I_6 = 1$$