

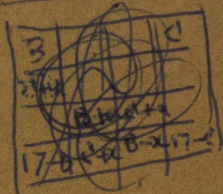
4, 5, 7, 8

14	7	11	2
12	1	13	8
5	16	4	9
3	10	6	15

2	11	7	14
8	13	1	12
9	4	16	5
15	6	10	3

2	8	9	15
11	13	4	6
7	16	10	14
14	2	5	3

2	11	7	14
8	13	1	12
9	4	16	5
15	6	10	3



(1, 15), (4, 12), (5, 11), (6, 10), (7, 9)

2	12	5	14
	16	4	
	1	13	
15	5	17	3

2, 3, 4, 5 | 1, 6, 7, 8  
15, 14, 13, 12 | 16, 11, 10, 9

2	11	7	14
5	16	4	9
12	1	13	8
17	6	10	3

2	7	11	14
8	13	1	12
9	4	16	5
15	10	6	3

2, 3, 5, 6, 11, 12, 14, 15  
1, 4, 7, 8, 9, 10, 13, 16

2, 3, 6, 7  
1, 4, 5, 8, 9, 12, 13, 16

11-d

a	b	c	d
e	f	g	h
i	j	k	l
m	n	o	p

B	17-c -a+c	17-B+a -c	C
C+a-d	17-B-a	17-c-a	B+a+d
17-c-a +d	B+a	C+a	17-B-a -d
17-B	C+a-c	B-a+c	17-c

5		15
4	16	6
8	11	14
12		2

A + B = 17  
C + D = 17

C + a - c + d - b + c = 17

a = b - A - a + B + b = 17

C + a - d  
+ D - a + d = 17  
[a = -1] 4 + a - c = 2  
1 - a + c = 3

c - a = 2  
c = a + 2  
c = a + 1  
a - c = -2  
a = 4, d = 1

a - c = x  
a - d = y

11-d 9

1	15	14	4
	12	9	
	5	8	
16	2	3	13

11-d, 1 11 d+b  
b+d 2 12 16-d  
3 13  
4 14  
5, 6, 7, 8, 9, 10, 11, 12 (4, 16) c=7  
6, 16

(4, 16)  
a = 4  
11  
16

5 2  
4 5  
16 3  
H 1

5		15
11	16	6
	1	14
12		2

$$T = \begin{pmatrix} 1 & 1 \\ 5 & 4 \end{pmatrix}$$

$$\begin{cases} K = i + j \\ l = 5i + 4j \end{cases}$$

$$\begin{cases} l - 4K = i \\ 5K - l = j \end{cases} \Rightarrow \begin{cases} i = l - 4K \\ j = 5K - l \end{cases}$$

- (1)  $b_{37} \rightarrow a_{48}$
- (2)  $b_{58} \rightarrow a_{41}$
- (3)  $b_{18} \rightarrow a_{46}$
- (4)  $b_{42} \rightarrow a_{49}$
- (5)  $b_{61} \rightarrow a_{42}$
- (6)  $b_{89} \rightarrow a_{44}$
- (7)  $b_{23} \rightarrow a_{47}$
- (8)  $b_{15} \rightarrow a_{43}$
- (9)  $b_{94} \rightarrow a_{45}$

4-36 -32  
41  
+9 = 8  
 $5 - 32 = -27$   
 $235 = 8$   
 $10 - 32 = -22$   
-27

# DIARY 1977

47	50	53	51	54	48	52	46	49
74	77	80	78	81	75	79	73	76
38	41	44	42	45	39	43	37	40
2	5	8	6	9	3	7	1	4
29	32	35	33	36	30	34	28	31
56	59	62	60	63	57	61	55	58
65	68	71	69	72	66	70	64	67
11	14	17	15	18	12	16	10	13
20	23	26	24	27	21	25	19	22

- (10)  $b_{99} \rightarrow a_{88}$
- (11)  $b_{85} \rightarrow a_{98}$
- (12)  $b_{23} \rightarrow a_{58}$
- (13)  $b_{22} \rightarrow a_{38}$
- (14)  $b_{91} \rightarrow a_{18}$
- (15)  $b_{58} \rightarrow a_{68}$
- (16)  $b_{64} \rightarrow a_{78}$
- (17)  $b_{16} \rightarrow a_{28}$

(1)  
m = 1

p.s for 79.42, p.299, BK-2

$a_{11} \rightarrow b_{29}$   
 $a_{34} \rightarrow b_{14}$   
 $a_{99} \rightarrow b_{99}$

With best compliments from:  $T = \begin{pmatrix} 1 & 3 \\ 3 & 1 \end{pmatrix}$

$$\begin{cases} i = \frac{1}{8}(3l - 4k) \\ j = \frac{1}{8}(3k - l) \end{cases}$$

- (1)  $b_{19} \rightarrow a_{16}$
- (2)  $b_{36} \rightarrow a_{36}$
- (3)  $b_{23} \rightarrow a_{26}$
- (4)  $b_{96} \rightarrow a_{96}$

6, 2, 5, 2, 4, 1, 7, 3, 9  
4, 1, 7, 3, 9, 6, 8, 5, 2  
 $K = i + 3j$   
 $l = 3i + j$   
 $l - 3K = -8j$   
 $K - 3l = -8i$

- (5)  $b_{33} \rightarrow a_{86}$
- (6)  $b_{79} \rightarrow a_{76}$
- (7)  $b_{53} \rightarrow a_{56}$
- (8)  $b_{49} \rightarrow a_{46}$
- (9)  $b_{66} \rightarrow a_{66}$

## Kashinath & Co

21  
71, SHANTINAGAR,  
HYDERABAD-500 028.

Telephone : { 36942  
34635

Cable : "ENTEC"  
Telex : 015-450

*Handwritten signature/initials*

- (10)  $b_{47} \rightarrow a_{14}$
- (19)  $b_{78} \rightarrow a_{15}$
- (29)  $b_{11} \rightarrow a_{17}$
- (37)  $b_{72} \rightarrow a_{18}$
- (46)  $b_{13} \rightarrow a_{19}$
- (55)  $b_{75} \rightarrow a_{12}$
- (64)  $b_{16} \rightarrow a_{13}$
- (73)  $b_{44} \rightarrow a_{11}$

$$T = \begin{pmatrix} 3 & 1 \\ 1 & 3 \end{pmatrix} \quad k-3l = -8j$$

$$k = 3i + j \quad l-3k = -8i$$

$$l = i + 3j \quad i = \frac{1}{8}(3k-l)$$

$$j = \frac{1}{8}(3l-k)$$

$i$  &  $j$  are interchanged  
 & even interchange rows & cols (2)

73	55	64	10	19	1	28	37	46
75	57	66	12	21	3	30	39	48
74	56	65	11	20	2	29	38	47
80	62	71	17	26	8	35	44	53
79	61	70	16	25	7	34	43	52
81	63	72	18	27	9	36	45	54
78	60	69	15	24	6	33	42	51
77	59	68	14	23	5	32	41	50
76	58	67	13	22	4	31	40	49

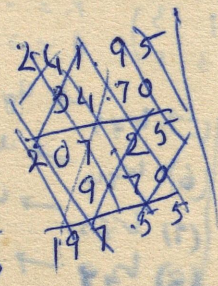
p.s. for  
 by 43.  
 p: 301.  
 Bk. 2  
 by cols.

q

$$\left. \begin{aligned} k &= 3i + j \\ l &= i + 3j \end{aligned} \right\}$$

- $a_{11} \rightarrow b_{44}$
- $a_{12} \rightarrow b_{37}$
- $a_{19} \rightarrow b_{31}$
- $a_{21} \rightarrow b_{75}$

$$\begin{array}{r} (3, -1) \\ 45 \\ \hline 39 \times 5 \\ \hline 195 \end{array}$$



73	75	74	80	79	81	78	77	76
55	57	56	62	61	63	60	59	58
64	66	65	71	70	72	69	68	67
10	12	11	17	16	18	15	14	13
19	21	20	26	25	27	24	23	22
1	3	2	8	7	9	6	5	4
28	30	29	35	34	36	33	32	31
37	39	38	44	43	45	42	41	40
46	48	47	53	52	54	51	50	49

p.s. for  
 do  
 by rows.

(3)

OUR PRINCIPALS AND THEIR PRODUCTS :

1. **Webber Manufacturing Co., USA**  
High Temperature Test chambers, Low Temperature Test Chambers, Humidity Chambers, Thermal Shock Chambers, Agree Chambers, Altitude Chambers, Walk-in-Chambers.
2. **Unholtz-Dickie Corporation, USA**  
Vibration Test Systems, Accelerometers.
3. **Akashi Seisakusho Ltd., Japan**  
Electro-hydraulic Vibration Test System, Balancing Machines, Material Testing Machines.
4. **Haag-Streit AG, Switzerland**  
Coordinatographs
5. **Singer-General Precision Kearfott Division, USA.**  
Digital Converters, Computers, Vertical Sensors, Motors, Gyros, Gearheads, Motor Tach Generators, Synchros, Resolvers, Servos, Test Equipment, Actuators etc.
6. **RHG Electronics Laboratory Export Corporation, USA.**  
Microwave Relay Links, FM Transmitters, FM Receivers, Double Balanced MIC Mixers, MIC & Hybrid Mixer-Preamps, Linear, IF Amplifiers, Logarithmic IF Amplifiers, Limiter Discriminators.
7. **Microwave & Electronic Systems Ltd., UK.**  
Microwave Ferrite Components, Coaxial Isolators, Waveguide Circulators and Isolators, Filters, Couplers, Terminations etc.
8. **Thomson-CSF, France**  
SESCOSEM Transistors, Diodes, Integrated Circuit, Thyristor Reed Relays, Capacitors, Delay Lines, Ferrite Cores, Filters, Memories, Motors, Resolvers, Resistors, Synchros, Tuners and Varactors.
9. **Genisco Technology Corporation, USA**  
WINSOCO Temperature & Pressure Transducers, GENISCO Accelerometers, Rate Tables, Centrifuges, Tape Recorders.
10. **Dage Corporation, USA**  
Amplifiers, Attenuators, Adapters, Cables, Connectors, Couplers, Diodes, Mixers, Oscillators, Multipliers, Modulators, Transmitters, Terminations etc.
11. **Andersen Laboratories, Inc., USA**  
Wiresonic Analog, Video, Electromagnetic Ultrasonic Delay Lines, Pulse Expansion/Compression Systems.
12. **Gabriel Mfg. Co. Ltd., UK**  
Flexible Waveguides, Twistable & Non Twistable.
13. **Metex Corporation, USA**  
EMI Shielding Material, Gasket & Components.
14. **Lars Microwave, USA**  
Active and Passive Devices, All Microwave Components and Sub-systems.
15. **MFE Corporation, USA**  
X-Y Strip Chart and Potentiometric Recorders, Digital Printers, Scanning Motors, Torque Motors, Teletype Projectors, Graphic Translators, Digital Cassette Tape Transistors.

(4)

- 16. **Photocircuits Corp., USA** Printed Motors
- 17. **Precision Electronics & Instruments, Florida** Synchros and Resolvers
- 18. **Bussman Mfg., Division, USA** Fast Acting and Slow Blowing Fuses and Fuse Holders.
- 19. **A. E. L. Israel Ltd., Israel** RF Components, Hybrid Microelectronic Components, RF Power Components and Equipments.
- 20. **GPE Controls, Inc., USA** Edge Guide & Line Guide Sensors, Telepulse Transmitters, Receiver Hydraulic Actuators and Controllers.
- 21. **OK Machine & Tool Corporation, USA** Wiring Analyser System and Wire Wrapping Tools.
- 22. **IMA Microwave Products, Sweden** Gunn Diodes, Silicon Impatt Diodes, PIN Diodes, Stop Recovery Diodes, Avalanche Diodes, X-band Varacter, Tunnel Oscillators.
- 23. **Vu-data Corporation, USA** Portable Oscilloscopes
- 24. **Adret Electronique, France** Frequency Generator Synthesizers, Wavecom Analyzers, Spectrum Analyzers, Heterodyne Decibelmeters, Frequency Standard Receivers, Frequency Error Multipliers.
- 25. **Coors Porcelain Co., USA** Alumina Ceramic Substrates, High Temperature Ceramic Tubes, Power Transistor Packages.
- 26. **Omniyig Inc., USA** YIG Filter, YIG Oscillators, YIG Harmonic Multipliers, YIG Discriminator, YIG Drivers.
- 27. **Trans-Tech, USA** Ferrite & Garnet Materials
- 28. **Nippon Electric Industry Co., Ltd., Japan** Wire Wrapping Tools
- 29. **Entec Engg. Works, Hyderabad** Environmental Test Chambers.
- MEDICAL ELECTRONIES**
- British Physical Laboratories (India) Pvt., Ltd., Palghat.** E. C. G. Machines, Multibed Intensive Coronary Care Units, Intensive Care Units, DC Defibrillators, Pacemakers, Telemetry Systems for Single and Multibeds.
- Nihon Kohden Kogyo Co., Ltd., Japan** Electromedical Apparatus consisting of Polygraphs, E. E. G.'s, Echonoscope, etc.,
- Jubilee Medical Engineering, Bangalore** Baby Incubators, Photo Therapy Lamps, Operation Theatre Lights (Mobile and Ceiling), TISSUE Processors, Oxygen Tents, etc.,
- Allied Electronics Corporation, Bombay** Connectors of Various Types, Defence Approved both JSS and MIL specifications.
- Pankaj Electricals, Bombay** Wrie Wound Potentiometers

# PERSONAL MEMORANDA

(5)

Name  $A_{11} A_{12} \dots A_{1n}$

Office 

22	18	04	40	25
15	6	2	23	19
3	24	20	11	7
16	12	8	4	25
5	21	17	15	

 Phone \_\_\_\_\_

Residence \_\_\_\_\_ Phone \_\_\_\_\_

Height \_\_\_\_\_ Weight \_\_\_\_\_ Blood Group \_\_\_\_\_ on \_\_\_\_\_

Vehicle No. \_\_\_\_\_ Driving Licence No. \_\_\_\_\_ Radio L. No. \_\_\_\_\_ TV L. No. \_\_\_\_\_

## INSURANCE POLICIES

$22+18+1+15+9$        $9+5+13+22+16$

## DAYS TO REMEMBER

## BIRTHDAYS

## ANNIVERSARIES

Jan.  $\sum_{x=1}^n A(i, j+x) = A(i, j+1) + A(i, j+2) + \dots + A(i, j+n)$

Feb.  $\sum_{j=i}^n A(i, j) = A_{i2} + A_{i3} + \dots + A_{in}$

u.d's  $\rightarrow$  rows  
c.d's  $\rightarrow$  cols

Mar.

1	2	3	4	5
6	7	8	9	10
11	12	13	14	15
16	17	18	19	20
21	22	23	24	25

9	5	24	19	14
25	20	15	10	1
11	6	2	21	16
3	22	17	12	7
18	13	8	4	23

9	5	21	17	13
22	18	14	10	
15	6	2	23	19
3	24	20	11	7
16	12	8	4	25

May

Jun.  $T = \begin{pmatrix} 1 & 1 \\ 2 & 3 \end{pmatrix}$   $k = i + j$   
 $l = 2i + 3j$

$a_{11} \rightarrow a_{25}$      $a_{21} \rightarrow a_{32}$     from  $1-2-3-5$  by  $(-2, -1)$   
 $a_{12} \rightarrow a_{33}$      $a_{22} \rightarrow a_{45}$     from  $1-2-3-5$  by  $(2, 1)$   
 $a_{13} \rightarrow a_{41}$      $a_{23} \rightarrow a_5$     from  $1-6-11-16-21$  by  $(2, -1)$   
 $a_{14} \rightarrow a_{54}$      $T = \begin{pmatrix} 1 & 2 \\ 2 & 1 \end{pmatrix}$      $R = i + 2j$   
 $a_{15} \rightarrow a_{12}$      $l = 2i + j$      $1-6-11-16-21$  by  $(2, -1)$

Jul.

9	5	1	2	3
2	3	4	5	1
5	1	2	3	4
3	4	5	1	2
1	2	3	4	5

5	0	20	15	10
20	15	10	5	0
10	5	0	20	15
0	20	15	10	5
15	10	5	0	20

7	5	19	16	14
17	19	12	10	3
15	8	1	20	17
4	18	20	13	6
18	11	9	2	21

$a_{11} \rightarrow a_{33}$      $a_{21} \rightarrow a_{45}$   
 $a_{12} \rightarrow a_{54}$   
 $a_{13} \rightarrow a_{25}$   
 $u(1, -2)$

Oct.

Nov.

Dec.

2	5	3	1	4
1	4	2	5	3
5	3	1	4	2
4	2	5	3	1
3	1	4	2	5

5	0	20	15	10
20	15	10	5	0
10	5	0	20	15
0	20	15	10	5
15	10	5	0	20

7	5	29	16	14
21	19	12	10	3
15	8	1	24	17
4	22	20	13	6
18	11	9	2	25

$\begin{pmatrix} 1 & 2 \\ 2 & 1 \end{pmatrix}$  also  
fasc cyclic  
non-square

$q=2$        $r=3$

(6)

### LAST YEAR 1976

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
SUN	4 11 18 25	1 8 15 22 29	7 14 21 28	4 11 18 25	30 2 9 16 23	6 13 20 27
MON	5 12 19 26	2 9 16 23	1 8 15 22 29	5 12 19 26	31 3 10 17 24	7 14 21 28
TUE	6 13 20 27	3 10 17 24	2 9 16 23 30	6 13 20 27	4 11 18 25	1 8 15 22 29
WED	7 14 21 28	4 11 18 25	3 10 17 24 31	7 14 21 28	5 12 19 26	2 9 16 23 30
THU	1 8 15 22 29	5 12 19 26	4 11 18 25	1 8 15 22 29	6 13 20 27	3 10 17 24
FRI	2 9 16 23 30	6 13 20 27	5 12 19 26	2 9 16 23 30	7 14 21 28	4 11 18 25
SAT	3 10 17 24 31	7 14 21 28	6 13 20 27	3 10 17 24	1 8 15 22 29	5 12 19 26

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
SUN	4 11 18 25	1 8 15 22 29	5 12 19 26	31 3 10 17 24	7 14 21 28	5 12 19 26
MON	5 12 19 26	2 9 16 23 30	6 13 20 27	4 11 18 25	1 8 15 22 29	6 13 20 27
TUE	6 13 20 27	3 10 17 24 31	7 14 21 28	5 12 19 26	2 9 16 23 30	7 14 21 28
WED	7 14 21 28	4 11 18 25	1 8 15 22 29	6 13 20 27	3 10 17 24	1 8 15 22 29
THU	1 8 15 22 29	5 12 19 26	2 9 16 23 30	7 14 21 28	4 11 18 25	2 9 16 23 30
FRI	2 9 16 23 30	6 13 20 27	3 10 17 24	1 8 15 22 29	5 12 19 26	3 10 17 24 31
SAT	3 10 17 24 31	7 14 21 28	4 11 18 25	2 9 16 23 30	6 13 20 27	4 11 18 25

### THIS YEAR 1977

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
SUN	30 2 9 16 23	6 13 20 27	6 13 20 27	3 10 17 24	1 8 15 22 29	5 12 19 26
MON	31 3 10 17 24	7 14 21 28	7 14 21 28	4 11 18 25	2 9 16 23 30	6 13 20 27
TUE	4 11 18 25	1 8 15 22	1 8 15 22 29	5 12 19 26	3 10 17 24 31	7 14 21 28
WED	5 12 19 26	2 9 16 23	2 9 16 23 30	6 13 20 27	4 11 18 25	1 8 15 22 29
THU	6 13 20 27	3 10 17 24	3 10 17 24 31	7 14 21 28	5 12 19 26	2 9 16 23 30
FRI	7 14 21 28	4 11 18 25	4 11 18 25	1 8 15 22 29	6 13 20 27	3 10 17 24
SAT	1 8 15 22 29	5 12 19 26	5 12 19 26	2 9 16 23 30	7 14 21 28	4 11 18 25

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
SUN	31 3 10 17 24	7 14 21 28	4 11 18 25	30 2 9 16 23	6 13 20 27	4 11 18 25
MON	4 11 18 25	1 8 15 22 29	5 12 19 26	31 3 10 17 24	7 14 21 28	5 12 19 26
TUE	5 12 19 26	2 9 16 23 30	6 13 20 27	4 11 18 25	1 8 15 22 29	6 13 20 27
WED	6 13 20 27	3 10 17 24 31	7 14 21 28	5 12 19 26	2 9 16 23 30	7 14 21 28
THU	7 14 21 28	4 11 18 25	1 8 15 22 29	6 13 20 27	3 10 17 24	1 8 15 22 29
FRI	1 8 15 22 29	5 12 19 26	2 9 16 23 30	7 14 21 28	4 11 18 25	2 9 16 23 30
SAT	2 9 16 23 30	6 13 20 27	3 10 17 24	1 8 15 22 29	5 12 19 26	3 10 17 24 31

### NEXT YEAR 1978

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
SUN	1 8 15 22 29	5 12 19 26	5 12 19 26	30 2 9 16 23	7 14 21 28	4 11 18 25
MON	2 9 16 23 30	6 13 20 27	6 13 20 27	3 10 17 24	1 8 15 22 29	5 12 19 26
TUE	3 10 17 24 31	7 14 21 28	7 14 21 28	4 11 18 25	2 9 16 23 30	6 13 20 27
WED	4 11 18 25	1 8 15 22	1 8 15 22 29	5 12 19 26	3 10 17 24 31	7 14 21 28
THU	5 12 19 26	2 9 16 23	2 9 16 23 30	6 13 20 27	4 11 18 25	1 8 15 22 29
FRI	6 13 20 27	3 10 17 24	3 10 17 24 31	7 14 21 28	5 12 19 26	2 9 16 23 30
SAT	7 14 21 28	4 11 18 25	4 11 18 25	1 8 15 22 29	6 13 20 27	3 10 17 24

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
SUN	30 2 9 16 23	6 13 20 27	3 10 17 24	1 8 15 22 29	5 12 19 26	31 3 10 17 24
MON	31 3 10 17 24	7 14 21 28	4 11 18 25	2 9 16 23 30	6 13 20 27	4 11 18 25
TUE	4 11 18 25	1 8 15 22 29	5 12 19 26	3 10 17 24 31	7 14 21 28	5 12 19 26
WED	5 12 19 26	2 9 16 23 30	6 13 20 27	4 11 18 25	1 8 15 22 29	6 13 20 27
THU	6 13 20 27	3 10 17 24 31	7 14 21 28	5 12 19 26	2 9 16 23 30	7 14 21 28
FRI	7 14 21 28	4 11 18 25	1 8 15 22 29	6 13 20 27	3 10 17 24	1 8 15 22 29
SAT	1 8 15 22 29	5 12 19 26	2 9 16 23 30	7 14 21 28	4 11 18 25	2 9 16 23 30

$$T = \begin{pmatrix} 1 & 4 \\ 4 & 1 \end{pmatrix}$$

on f.p.s of  $n=7$ .

17	44	22	7	34	12	39
14	41	19	46	24	2	29
4	31	9	36	21	48	26
43	28	6	33	11	38	16
40	18	45	23	1	35	13
30	8	42	20	47	25	3
27	5	32	10	37	15	49

$$K = i + 4j$$

$$L = 4i + j$$

(7)

$$\begin{matrix} a_{11} \rightarrow a_{55} & a_{21} \rightarrow a_{62} & (-3, -1) \\ a_{12} \rightarrow a_{26} & a_{31} \rightarrow a_{76} \\ a_{13} \rightarrow a_{67} \\ \text{in } (1, 3) \end{matrix}$$

3	2	1	7	6	5	4
7	6	5	4	3	2	1

(P)  $q=4$

14	42	21	0	28	7	35
7	35	14	42	21	0	28

(R)  $q=2$

So that for every prime  $p$  any regular f.p.s. grid  $p$  into a cyclic magic square which is therefore regular.

42	43	38	44	39	40	37	41	45
50	61	56	62	57	58	55	59	63
24	25	20	26	21	22	19	23	27
78	79	74	80	75	76	73	77	81
15	16	11	17	12	13	10	14	18
33	34	29	35	30	31	28	32	36
6	7	8	3	4	1	5	9	
51	52	47	53	48	49	46	50	54
69	70	65	71	66	67	64	68	72

$$T = \begin{pmatrix} 1 & 1 \\ 7 & 5 \end{pmatrix}$$

$$K = i + j$$

$$L = 7i + 5j$$

$$\frac{59}{2} = \frac{14}{2} + \frac{31}{2} = \frac{47}{2}$$

# PLANNERS DIARY 1977

$$\begin{matrix} 9 & 14 & 28 & 63 \\ 18 & 7 & 35 & 63 \end{matrix}$$

$$\begin{matrix} b_{11} \rightarrow a_{73} \\ b_{12} \rightarrow a_{37} \\ b_{13} \rightarrow a_{82} \\ b_{26} \rightarrow a_{74} \\ b_{32} \rightarrow a_{25} \\ b_{47} \rightarrow a_{76} \end{matrix}$$

$$\begin{matrix} b_{53} \rightarrow a_{77} \\ b_{68} \rightarrow a_{78} \\ b_{74} \rightarrow a_{79} \\ b_{89} \rightarrow a_{71} \\ a_{95} \rightarrow a_{72} \\ b_{37} \rightarrow a_{57} \\ b_{45} \rightarrow a_{67} \end{matrix}$$

$$\begin{matrix} L = 7K = 7i + 7j \\ L = 5K = 5i + 5j \\ K = i + j \\ i = \frac{1}{2}(L - 5j) \\ j = \frac{1}{2}(L - 7i) \end{matrix}$$

# PLANNING 1977

$$T = \begin{pmatrix} a & c \\ b & d \end{pmatrix}$$

$$K = ai + cj$$

$$L = bi + dj$$

$$a+c = 6, a+2c = 10$$

$$b+d = 4, b+2d = 7$$

$$c=4, a=2$$

$$d=3, b=1$$

$$\begin{pmatrix} 2 & 4 \\ 1 & 3 \end{pmatrix}$$

## JANUARY

S 1  $a_{11} \rightarrow b_{64}$

S 2  $a_{12} \rightarrow b_{16,7}$

M 3  $a_{13} \rightarrow b_{8,10}$

T 4

W 5 (1)  $b_{64} \rightarrow a_{13,2} \rightarrow a_{5,7}$

T 6 (2)  $b_{10,7} \rightarrow a_{8,10,13}$

F 7 (3)  $b_{8,10}$

S 8 (4)  $b_{12,13}$

S 9 (5)  $b_{4,3}$

M 10 (6)  $b_{2,6}$

T 11 (7)  $b_{13,9}$

W 12 (8)  $b_{7,12}$

T 13 (9)  $b_{9,2}$

F 14 (10)  $b_{11,5}$

S 15 (11)  $b_{5,8}$

S 16 (12)  $b_{3,11}$

M 17 (13)  $b_{11}$

T 18

W 19 Try  $T = \begin{pmatrix} 2 & 3 \\ 3 & 2 \end{pmatrix}$

T 20

F 21  $K = 2c + 3j$

S 22  $L = 3c + 2j$

S 23  $3K - 2L = 5j$

M 24  $2K - 3L = -5c$

T 25  $i = \frac{1}{5}(3L - 2K)$

W 26  $j = \frac{1}{5}(3K - 2L)$

T 27

F 28  $T = \begin{pmatrix} 3 & 2 \\ 2 & 3 \end{pmatrix}$

S 29

S 30  $T = \begin{pmatrix} 1 & 2 \\ 2 & 1 \end{pmatrix}$

M 31

$K = c + 2j$   $(L - 2K) = -3j$

$L = 2c + j$   $K - 2L = -3c$

$i = \frac{1}{3}(2L - K)$   $4, 17$

$j = \frac{1}{3}(2K - L)$

## FEBRUARY

T 1  $\begin{pmatrix} 1 & 3 \\ 3 & 1 \end{pmatrix}$   $K = c + 3j$

W 2  $\begin{pmatrix} 3 & 1 \\ 1 & 3 \end{pmatrix}$   $L = 3c + j$

T 3  $a_{4,10}$   $i = \frac{1}{8}(3L - K)$

F 4  $a_{3,11}$   $j = \frac{1}{8}(3K - L)$

S 5  $\begin{pmatrix} 1 & 4 \\ 4 & 1 \end{pmatrix}$   $i = \frac{1}{15}(4L - K)$

S 6  $\begin{pmatrix} 4 & 1 \\ 1 & 4 \end{pmatrix}$   $j = \frac{1}{15}(4K - L)$

M 7  $a_{5,10}$

T 8  $a_{9,10}$

W 9

T 10

F 11

S 12

S 13

M 14

T 15

W 16

T 17

F 18

S 19

S 20

M 21

T 22

W 23

T 24

F 25  $b - 2c = -14 \Rightarrow -1 = 12$

S 26  $21 - 20 = \frac{26}{5} = 39, 52, 65$

S 27  $\frac{1}{5}$

M 28  $\frac{16}{5}$

T 29

W 30

T 31

## MARCH

T 1  $\frac{2}{8}$   $1, 10, 27, 41, 54, 67, 80$

W 2  $\frac{16}{8}$

T 3  $\frac{8}{8}$

F 4  $10, 23, 36, 49, 62, 75, 88$

S 5  $20, 33, 46, 59, 72, 85, 98$

S 6  $111, 124, 137, 150$

M 7  $18, 31, 44, 57, 70, 83, 96, 109$

T 8  $122, 135$

W 9  $33, 8, 10, 22, 35, 48, 61, 74, 87$

T 10  $100, 113, 126, 139, 152$

F 11  $165$

S 12

S 13

M 14

T 15

W 16

T 17

F 18

S 19

S 20

M 21

T 22

W 23

T 24

F 25

S 26

S 27

M 28

T 29

W 30

T 31

$\begin{pmatrix} 64 \\ 36 \\ 28 \end{pmatrix}$

25

$k = i + j$   
 $l = 5i + 8j$

**APRIL**

F 1	
S 2	1 1
S 3	5 8
M 4	
T 5	
W 6	$a_{11} \rightarrow b_{2,13}$
T 7	$a_{12} \rightarrow b_{38} \quad (-5, -1)$
F 8	$a_{13} \rightarrow b_{43}$
S 9	$a_{14} \rightarrow b_{5,11}$
S 10	$a_{15} \rightarrow b_{15} \quad (0, 2)$
M 11	$a_{21} \rightarrow b_{35} \quad (2, 0)$
T 12	$a_{22} \rightarrow b_{4,13}$
W 13	$a_{2,13} \rightarrow b_{2,10} \quad (0, 0)$
T 14	$a_{31} \rightarrow b_{4,10} \quad (-2, 0)$
F 15	$a_{3,13} \rightarrow b_{3,2} \quad (0, 0)$
S 16	$a_{4,1} \rightarrow b_{5,2} \quad (0, 0)$
S 17	
M 18	$T = \begin{pmatrix} 3 & 11 \\ 11 & 3 \end{pmatrix} \rightarrow (8, 5)$
T 19	
W 20	$T = \begin{pmatrix} 6 & 8 \\ 8 & 6 \end{pmatrix} \rightarrow (2, 11)$
T 21	
F 22	
S 23	$\begin{pmatrix} 3 & 11 \\ 11 & 3 \end{pmatrix} \begin{pmatrix} 6 & 8 \\ 8 & 6 \end{pmatrix}$
S 24	$\begin{pmatrix} 6 & 8 \\ 8 & 6 \end{pmatrix} \begin{pmatrix} 3 & 11 \\ 11 & 3 \end{pmatrix}$
M 25	$\begin{pmatrix} 100 & 90 \\ 90 & 106 \end{pmatrix} \quad (10, 3)$
T 26	$\begin{pmatrix} 21 & 12 \\ 12 & 2 \end{pmatrix}$
W 27	
T 28	
F 29	
S 30	$\begin{pmatrix} 8 & 5 \\ 2 & 11 \end{pmatrix}$

**MAY**

S 1	26 13
M 2	20 27
T 3	28 14
W 4	9
T 5	30
F 6	17 5
S 7	6 32
S 8	33 19
M 9	8
T 10	35
W 11	22 10
T 12	18
F 13	38 24
S 14	14 6
S 15	$k = 3i + 11j \quad 144$
M 16	$l = 11i + 3j \quad 11 \quad 50$
T 17	$a_{11} \rightarrow b_{11} \equiv k_{11}$
W 18	$a_{12} \rightarrow b_{2,5,17} = b_{12,4}$
T 19	<u>Step (3, 2)</u>
F 20	$k = 6i + 8j \quad a_{1,13} = b_{3,11}$
S 21	$l = 8i + 6j \quad \& \text{ then step } (1, -1)$
S 22	$a_{14} \rightarrow b_{11}$
M 23	$k = 6i + 9j$
T 24	$l = 8i + 6j$
W 25	$a_{11} \rightarrow b_{11}, a_{12} \rightarrow b_{2,2,20} = b_{9,7}$
T 26	$a_{13} \rightarrow b_{3,26} \rightarrow b_{4,13}$
F 27	$a_{14} \rightarrow b_{110, 86} = b_{6,8}$
S 28	$(1, 1), (9, 7), (4, 13), (12, 6)$
S 29	$(7, 12), (2, 5), (10, 11), (5, 4)$
M 30	$(13, 10), (8, 3), (3, 9), (11, 2)$
T 31	$(6, 8)$
	$a_{21} \rightarrow b_{20, 22} \equiv b_{7,9} \& \text{ step } (1, -1)$
	$(8, 6) \Delta (1, 7)$

**JUNE**

W 1	39
T 2	1
F 3	2
S 4	29 15
S 5	16 4
M 6	31
T 7	18
W 8	8 7
T 9	34 20
F 10	21 9
S 11	36
S 12	37 23
M 13	12 12
T 14	
W 15	$(8, 5), (8, 5), (8, 5), (8, 5), (8, 5)$
T 16	$(2, 11), (2, 11) \quad (12)$
F 17	$(8, 5), (8, 5)$
S 18	$(1, 1) \rightarrow (12, 4) \rightarrow (10, 7), (8, 10)$
S 19	$(6, 13), (4, 5), (2, 6), (13, 4), (11, 8)$
M 20	$(7, 12), (7, 12), (5, 8), (2, 11)$
T 21	$a_{21} \rightarrow b_{17, 25} = b_{4, 12}$
W 22	
T 23	
F 24	
S 25	
S 26	
M 27	
T 28	
W 29	
T 30	

# PLANNING 1977

13, 26, 39, 52, 65, 78  
91, 104  
117, 130, 143, 156, 169

(10)

13  
26  
39  
52  
65  
78  
91  
104  
117  
130  
143  
156  
169

①  
②  
③  
④  
⑤  
⑥  
⑦  
⑧  
⑨  
⑩  
⑪  
⑫

## JULY

F 1	1	51				30
S 2		15	65			7
S 3			29	66		
M 4			6	43		
T 5	78			20	57	
W 6	42	79			34	71
T 7	19	56			11	48
F 8		33	70			84 25
S 9		10	47			
S 10			24	61		
M 11			85	38	75	
T 12	60			2	52	
W 13	37	74			16	53
T 14		2	3	4	5	6

## AUGUST

M 1	67			22	59	
T 2	44		82		36	73
W 3	21	58			13	50
T 4		35	72			14
F 5	83	12	49			
S 6			26	63		
S 7				27	77	
M 8	62			4	41	
T 9	39	76			18	55
W 10	3	40				32
T 11		17	54		9	
F 12			31	68	81	
S 13			8	45		
S 14		7	8	9	10	11

## SEPTEMBER

T 1						
F 2						
S 3						
S 4	64					
M 5	28					
T 6	5					
W 7						
T 8						
F 9	80					
S 10	69					
S 11	46					
M 12	23					
T 13						
W 14	13					

M 18 (9,4)  
T 19 (9,5)  
W 20 (5,9)  
T 21  $K = 9i + 5j$   
F 22  $L = 5i + 9j$   
S 23  $a_{11} \rightarrow b_{11}$   
S 24  $a_{12} \rightarrow b_{19,23} \equiv b_{6,10}$   
M 25  
T 26 (9,-5)  
W 27  
T 28  
F 29  $K = 11i + 3j$   
S 30  $L = 3i + 11j$   
S 31  $a_{11} \rightarrow b_{17,25} \equiv b_{4,12}$   
 $a_{12}$

M 15  
T 16 (6,1)  $b_{4,12}, b_{7,10}, b_{10,8}, b_{13,6}$   
W 17  
T 18  $b_{3,4}, b_{6,2}, b_{9,13}, b_{12,11}, b_{2,9}$   
F 19  $b_{5,7}, b_{8,5}, b_{11,3}$   
S 20  
S 21  $a_{21} \rightarrow b_{25,19} \equiv b_{12,4}$   
M 22 12  
T 23  $K = i + 2j$   
W 24  $L = 2i + j$   
T 25  $a_{11} \rightarrow a_{33}$   
F 26  $a_{12} \rightarrow a_{14}$   
S 27  $a_{13} \rightarrow a_{31}$   
S 28  $a_{14} \rightarrow a_{12}$   
M 29  $a_{21} \rightarrow a_{41}$

1	8	15	10
12	13	4	5
14	11		
7	2	9	

1	8	14	11
12	13	7	2
15	10	4	5
6	3	9	16

1	8	11	14
12	13	2	7
6	3	16	9
15	10	5	4

1	8	10	15
12	13	6	
7	2	16	9
14	11	5	4

1	8	13	12
14	11	2	7
4	5	16	9
15	10	3	6

(-2, -3)

B & J's magic squares and correspond p.s. under  $\begin{pmatrix} 1 & 2 \\ 2 & 1 \end{pmatrix}$  (11).  
 $B$  is magic square &  $A_y$  is the corresp. p.s.

**OCTOBER**

S 1 under  $\begin{pmatrix} 1 & 2 \\ 2 & 1 \end{pmatrix}$ .  
 S 2  
 M 3  $a_{11} \rightarrow b_{33}$   
 T 4  $a_{12} \rightarrow b_{14}$   
 W 5  $a_{13} \rightarrow b_{31}$   
 T 6  $a_{14} \rightarrow b_{12}$   
 F 7

S 8 (1) (102)

1	8	10	15
12	13	3	6
7	2	16	4
14	11	15	9

T 13 (2) (104)

1	8	10	15
14	11	5	4
7	2	16	9
12	13	3	6

T 18 (3) (107)

1	8	11	14
12	13	2	7
6	3	16	4
15	10	5	9

S 23 (4) (109)

1	8	11	14
15	10	5	4
6	3	16	9
12	13	2	7

F 28 (5) (116)

1	8	13	12
14	11	2	7
4	5	16	9
15	10	3	6

**NOVEMBER**

T 1  $a_{21} \rightarrow b_{41}$   
 W 2  $a_{22} \rightarrow b_{22}$   
 T 3  $a_{23} \rightarrow b_{43}$   
 F 4  $a_{24} \rightarrow b_{24}$   
 S 5  
 S 6  
 M 7

T 8

16	15	17	8
14	13	5	6
10	9	1	2
12	11	3	4

M 14

16	15	7	8
12	11	3	4
10	9	1	2
14	13	5	6

S 19

16	14	6	8
15	13	5	7
11	9	1	3
12	10	2	4

T 24

16	14	6	8
12	10	2	4
11	9	1	3
15	13	5	7

T 29

16	12	4	8
15	11	3	7
13	9	1	5
14	10	2	6

**DECEMBER**

T 1  
 F 2  $a_{31} \rightarrow b_{13}$   
 S 3  $a_{32} \rightarrow b_{34}$   
 S 4  $a_{33} \rightarrow b_{11}$   
 M 5  $a_{34} \rightarrow b_{32}$   
 T 6  
 W 7

T 8

1	8	15	10
12	13	6	3
14	11	4	5
7	2	9	16

associated

F 9  
 S 10 p.s. 2 (2, 3, 13, 16)  
 S 11  
 M 12  
 T 13  
 W 14  
 T 15 p.s. 2 (2, 5, 11, 16)  
 F 16  
 S 17  
 S 18  
 M 19  
 T 20 p.s. 3 (2, 3, 13, 16)  
 W 21  
 T 22  
 F 23  
 S 24

S 25 p.s. 3 (3, 5, 10, 16)  
 M 26  
 T 27  
 W 28  
 T 29  
 F 30 f.p.s. 1 (2, 5, 11, 16)  
 S 31

# January 1977

(12) (1,1) (1,2)

SUNDAY

MONDAY

TUESDAY

WEDNESDAY

(6) **30**  
(117) (3,5,10,16)

1	8	13	12
15	10	3	6
4	5	16	7
14	11	2	7

(N.P.'s)

**31**

16	12	4	8
14	10	2	6
13	9	1	5
15	11	3	7

f.p.s.1

(11) **291**

1	14	7	12
15	4	9	6
10	5	16	3
8	11	2	13

(4,5,9,16)

16	12	10	14
8	4	2	6
7	3	1	5
15	11	9	13

f.p.s.2

(7) **2**  
(171) (2,7,9,16)

1	12	6	15
14	7	9	4
11	2	16	5
8	13	3	10

**3**

16	15	11	12
8	7	3	4
6	5	1	2
14	13	9	10

f.p.s.3

(12) **4**  
(204)

1	14	11	8
15	4	5	10
6	9	16	3
12	7	2	13

(4,5,9,16)

**5**

16	8	6	14
12	4	2	10
11	3	1	9
15	7	5	13

f.p.s.3

(8) **9**  
(174) (3,6,9,16)

1	12	7	14
15	6	9	4
10	3	16	5
8	13	2	11

**10**

16	14	10	12
8	6	2	4
7	5	1	3
15	13	9	11

f.p.s.2

(13) **11**  
(279)

2	7	9	16
11	14	4	5
8	1	15	10
13	12	6	3

(1,4,14,15)

**12**

15	16	8	7
13	14	6	5
9	10	2	1
11	12	4	3

f.p.s.2

(9) **16**  
(177) (2,7,9,16)

1	12	13	8
14	7	2	11
4	9	16	5
15	6	3	10

(N.P.'s)

**17**

16	8	4	12
15	7	3	11
13	5	1	9
14	6	2	10

f.p.s.1

(14) **18**  
(281)

2	7	9	16
13	12	6	3
8	1	15	10
11	14	4	5

**19**

15	16	8	7
11	12	4	3
9	10	2	1
13	14	6	5

f.p.s.2

(10) **23**  
(174) (3,6,9,16)

1	12	13	8
15	6	3	10
4	9	16	5
14	7	2	11

(N.P.'s)

**24**

16	8	4	12
14	6	2	10
13	5	1	9
15	7	3	11

f.p.s.1

(15) **25**  
(292)

2	7	12	13
11	14	1	8
5	4	15	10
16	9	6	3

**26**

15	13	5	7
16	14	6	8
12	10	2	4
14	9	1	3

f.p.s.3

2	7	13	12
16	9	3	6
11	14	8	1
5	4	10	15

THURSDAY

FRIDAY

SATURDAY

(16) 294

2	7	12	13
16	9	6	3
5	4	15	10
11	14	1	8



15	13	5	7
11	9	1	3
12	10	2	4
16	14	6	8

f.s-3

1 (21) 372

2	11	14	7
13	8	1	12
3	10	15	6
16	5	4	9

N.P'D

DATE TIME PLACE

1 SA

15	7	3	11
16	8	4	12
14	6	2	10
13	5	1	9

6 f.p.s-1

6 (17) 304

2	7	14	11
13	12	1	8
3	6	15	10
16	9	4	5

N.P'D

7

15	11	3	7
16	12	4	8
14	10	2	6
13	9	1	5

f.p.s-1

8 (22) 375

2	11	14	7
16	5	4	9
3	10	15	6
13	8	1	12

N.P'D

9 SU

15	7	3	11
13	5	1	9
14	6	2	10
16	8	4	12

14 f.p.s-1

13 (18) 305

2	7	14	11
16	9	4	5
3	6	15	10
13	12	1	8

N.P'D

14

15	11	3	7
13	9	1	5
14	10	2	6
16	12	4	8

f.p.s-1

15 (23) 393

2	13	8	11
16	3	10	5
9	6	15	4
7	12	1	14

16 SU

15	11	9	13
7	3	1	5
8	4	2	6
16	12	10	14

19 f.s-2

20 (19) 355

2	11	5	16
13	8	10	3
12	1	15	6
7	14	4	9



21

15	16	12	11
7	8	4	3
5	6	2	1
13	14	10	9

f.s-3

22 (24) 396

2	13	12	7
16	3	6	9
5	10	15	4
11	8	1	14

23 SU

15	7	5	13
11	3	1	9
12	4	2	10
16	8	6	14

27 f.s-3

27 (20) 365

2	11	8	13
16	5	10	3
9	4	15	6
7	14	1	12



28

15	13	9	11
7	5	1	5
8	6	2	4
16	14	10	12

f.s-2

29 (25) 469

3	6	9	16
13	12	7	2
8	1	14	11
10	15	4	5

NEXT MONTH - FEBRUARY 1977

SUN MON TUE WED THU FRI SAT

14	16	8	6	8	4	5
10	12	4	2	10	11	12
9	11	15	3	16	7	18
13	15	21	7	5	24	25

27 28 f.s-3

2	11	13	8
16	5	3	10
7	14	12	1
9	4	6	15

15	11	9	11
7	5	3	1
8	6	2	4
16	14	10	12

February 1977

(14)

SUNDAY

MONDAY

TUESDAY

WEDNESDAY

(26) (473)

3	6	12	13
16	9	7	2
5	4	14	11
10	15	1	8

14	13	5	6
10	9	1	2
12	11	3	4
16	15	7	8

f.p.s.2

1 (31) (536)

3	10	15	6
13	8	1	12
2	11	14	7
16	5	4	9

(N.P.'s)

2

14	6	2	10
16	8	4	12
15	7	3	11
13	5	1	9

f.p.s.1.

(27) (6) (483)

3	6	15	10
13	12	1	8
2	7	14	11
16	9	4	5

(N.P.'s)

7

14	10	2	6
16	12	4	8
15	11	3	7
13	9	1	5

f.p.s.1

8 (32) (537)

3	10	15	6
16	5	4	9
2	11	14	7
13	8	1	12

(N.P.'s)

9

14	6	2	10
13	5	1	9
15	7	3	11
16	8	4	12

f.p.s.1

(28) (13) (485)

3	6	15	10
16	9	4	5
2	7	14	11
13	12	1	8

(N.P.'s)

14

14	10	2	6
13	9	1	5
15	11	3	7
16	12	4	8

f.p.s.1

15 (33) (560)

3	13	8	10
16	2	11	5
9	7	14	4
6	12	1	15

16

14	10	13	1
6	2	1	5
8	4	3	7
16	12	11	15

p.s.3

(29) (20) (530)

3	10	5	16
13	8	11	2
12	1	14	7
6	15	4	9

21

14	16	12	10
6	8	4	2
5	7	3	1
13	15	11	9

p.s.2

22 (34) (565)

3	13	12	6
16	2	7	9
5	11	14	4
10	8	1	15

23

14	6	5	13
10	2	1	9
12	4	3	11
16	8	7	15

p.s.2

(30) (27) (532)

3	10	8	13
16	5	11	2
9	4	14	7
6	15	1	12

28

14	13	9	10
6	5	1	2
8	7	3	4
16	15	11	12

p.s.3

(35) (621)

4	5	10	15
14	11	8	1
7	2	13	12
9	16	3	6

13	15	7	5
9	11	3	1
10	12	4	2
14	16	8	6

p.s.3

THURSDAY

FRIDAY

SATURDAY

MAIN MEETINGS

3 (36) (623)

4	5	11	14
15	10	8	1
6	3	13	12
9	16	2	7



4

13	14	6	5
9	10	2	1
11	12	4	3
15	16	8	7

p.s.2

5 (41) (702)

4	9	16	5
4	7	2	11
1	12	13	8
15	6	3	10



(N.P'D)

10 (37) (646)

4	5	16	9
14	11	2	7
1	8	13	12
15	10	3	16



11

13	9	1	5
15	11	3	7
16	12	4	8
14	10	2	6

f.p.s.1

12 (42) (704)

4	9	16	5
15	6	3	10
1	12	13	8
14	7	2	11



(N.P'D)

17 (38) (647)

4	5	16	9
15	10	3	6
1	8	13	12
14	11	2	7



18

13	9	1	5
14	10	2	6
16	12	4	8
15	11	3	7

f.p.s.1

19 (43) (744)

4	14	7	9
15	1	12	6
10	8	13	3
5	11	2	16



24 (39) (690)

4	9	6	15
14	7	12	1
11	2	13	8
5	16	3	10

25

13	15	11	9
5	7	3	1
6	8	4	2
14	16	12	10

p.s.2

26 (44) (748)

4	14	11	5
15	1	8	10
6	12	13	3
9	7	2	16



(40) (691)

4	9	7	14
15	6	12	1
10	3	13	8
5	16	2	11



13	14	10	9
5	6	2	8
11	12	4	3
15	16	12	11

p.s.3

(45) (785)

5	4	14	11
16	9	7	2
3	6	12	13
10	15	1	8



4	9	14	7
15	6	11	12
3	16	11	8
10	3	8	13

DATE TIME PLACE

1 TU

13	5	1	9
15	7	3	10
16	8	4	12
14	6	2	10

6 SU f.p.s.1

10

13	5	1	9
14	6	2	10
16	8	4	12
15	7	3	11

13 SU f.p.s.1

18

13	9	10	14
15	1	2	6
7	3	4	8
15	11	12	16

20 SU p.s.3

26

13	5	6	14
9	1	2	10
11	3	4	12
15	7	8	16

27 SU p.s.2

NEXT MONTH - MARCH 1977

SUN MON TUE WED THU FRI SAT

12	11	3	14	4	5
10	9	1	2	11	12
14	13	5	6	18	19
16	15	7	8	25	26
18	17	9	10		
20	19	11	12		
22	21	13	14		
24	23	15	16		
26	25	17	18		
28	27	19	20		
30	29	21	22		
31	30	23	24		

p.s.2

March 1977

SUNDAY

MONDAY

TUESDAY

WEDNESDAY

(46) 788

5	4	15	10
16	9	6	3
2	7	12	13
11	14	11	8



12	10	2	4
11	9	1	3
15	13	5	7
16	14	6	8

p.s.3

1  
24 + 44 + 19 + 42  
+ 17 + 45 + 22 + 47 = 260 ✓

58 + 59 + 60 + 64 + 63 + 62 + 61 + 57 ✗  
1, 2, 3, 4, 5, 6, 7  
a-b = c-d = e-f

(47) 828

6	3	13	12
15	10	8	1
4	5	11	14
9	16	2	7



7

11	12	4	10
9	10	2	1
13	14	6	5
15	16	8	7

p.s.2

8

n=7 Narayana type

46	11	3	26	41	33	15
42	29	16	44	10	7	27
12	6	28	58	30	18	43
32	17	47	13	5	24	37
1	23	39	31	19	48	14
20	49	8	2	25	36	35
22	40	34	21	45	9	4

9 A=42, B=7, C=0  
D=21, E=35, F=28,  
G=14.  
a=4, b=2, c=7, d=5  
e=3, f=1, g=6  
1, 2, 3, 4, 5, 7  
B & J'n

(48) 839

6	3	16	9
15	10	5	4
1	8	11	12
12	13	2	7



14

11	9	1	3
12	10	2	4
16	14	6	8
15	13	5	7

p.s.3

15

(R)

0	42	35	28	21	14	7
21	14	7	0	42	35	28
42	35	28	21	14	7	0
14	7	0	42	35	28	21
35	28	21	14	7	0	42
7	0	42	35	28	21	14
28	21	14	7	0	42	35

16 (P) (R & N's)

2	5	3	7	3	6	2
5	2	1	6	4	7	3
7	4	5	2	1	5	4
5	4	7	3	6	2	1
2	1	6	3	7	3	6
3	5	2	1	6	4	7
4	7	4	6	1	1	5

20

16 of Narayana  
16 divisible from  
16 " "  
6 2  
5 2  
4 10  
3 10  
2 12  
1 12  
48

21

Narayana type all derived from variants of f.p.s.  
p.s. variants of p.s.2  
" " p.s.3.

22

23

Repeated numbers in (P)  
2, 3, 5, 4, 6, 1

27

(1 R 3) k = i + 3j  
3 1 l = 3i + j  
a<sub>11</sub> → b<sub>14</sub> a<sub>21</sub> → b<sub>2</sub>  
a<sub>12</sub> → b<sub>31</sub>  
a<sub>13</sub> → b<sub>22</sub>  
a<sub>14</sub> → b<sub>13</sub>

28

(1 4) k = i + 4j  
4 1 l = 4i + j  
a<sub>11</sub> → b<sub>11</sub> a<sub>21</sub> → b<sub>21</sub>  
a<sub>12</sub> → b<sub>12</sub> a<sub>22</sub> → b<sub>22</sub>  
a<sub>13</sub> → b<sub>13</sub> a<sub>23</sub> → b<sub>23</sub>  
a<sub>14</sub> → b<sub>14</sub> a<sub>24</sub> → b<sub>24</sub>

29

8	16	9
15	10	4

30

7, 4, 1, 5, 2, 6, 3

(17)

March 1977

MAIN MEETINGS

THURSDAY

FRIDAY

SATURDAY

**3**

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	32	33	34	35
36	37	38	39	40	41	42
43	44	45	46	47	48	49

**4**

$$T = \begin{pmatrix} 1 & 1 \\ 3 & 4 \end{pmatrix}$$

$$k = i + j$$

$$l = 3i + 4j$$

$$\begin{matrix} a_{11} \rightarrow b_{27} & a_{17} \rightarrow b_{13} \\ a_{12} \rightarrow b_{34} & a_{21} \rightarrow b_{33} \\ a_{13} \rightarrow b_{41} & \end{matrix}$$

**5**

steps are  $(-3, -1)$  or  $(4, -1)$   
and  $(0, -2)$

**10**

19	13	7	43	37	31	25
44	38	32	26	20	14	8
27	21	15	9	3	45	39
3	46	40	34	28	15	9
35	22	16	10	4	47	41
11	5	48	42	29	23	17
36	30	24	18	12	6	49

**11**

**12**

Narayana Panthos  $4 \times 2$ , nante

**17**

1	8	13	12
14	11	2	7
4	5	16	9
15	10	3	6

$\sqrt{(2, -1)}$

**18**

1	14	4	15
8	11	5	10
13	2	16	3
12	7	9	6

$(1, 2)$

**19**

1	14	4	15
12	7	9	6
13	2	16	3
8	11	5	10

$(1, 2)$

**24**

1	12	13	8
14	7	2	11
4	9	16	5
15	6	3	10

$\sqrt{(2, -1)}$

**25**

1	13	12	8
14	7	2	11
4	9	16	5
15	6	3	10

**26**

1	14	4	15
12	7	9	6
13	2	16	3
15	4	5	10

$(2, -1), (1, -1)$

**31**

1	12	6	15
14	7	9	4
11	2	16	5
8	13	3	10

**31**

1	8	13	12
14	11	2	7
4	5	16	9
15	10	3	6

$(2, -1) (1) A_1$

**31**

1			
15			
		16	
		2	

$(2, 1)$

DATE	TIME	PLACE
1	TU	
2		
3		
4		
5		
6	SU	
7		
8		
9		$(2, -1)$
10		$(2, 1)$
11		$(1, 2)$
12		$(-1, 2)$
13	SU	
14		
15		$4 \times 2 \times$
16		
17		
18		
19		
20	SU	
21		$(1, 2)$
22		
23		
24		
25		$(-1, 2)$
26		
27	SU	
28		
29		
30		
31	TH	

NEXT MONTH — APRIL 1977

SUN	MON	TUE	WED	THU	FRI	SAT
				1	2	
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

April 1977

(18)

SUNDAY

MONDAY

TUESDAY

WEDNESDAY

28

1	12	13	8
14	7	2	11
4	9	16	5
15	6	3	10

$A_2$  (2)

1	14	11	8
12	7	2	13
6	9	16	3
15	4	5	10

(3)  $A_3$

1	8	11	14
12	13	2	7
6	3	16	9
15	10	5	4

(4)  $A_4$   
1-4-3-2

1	<del>14</del>	<del>2</del>	3
12	7	13	11
6	<del>16</del>	16	<del>8</del>
15	<del>4</del>	5	

3

4

5

6

<del>1</del>	<del>12</del>	<del>13</del>	8
<del>14</del>	7	2	<del>11</del>
<del>4</del>	9	<del>16</del>	5
<del>15</del>	6	3	<del>10</del>

1	14	7	10
8	11	2	13
10	5	16	3
15	4	9	6

(5)  $A_5$

1	12		14
<del>8</del>	<del>11</del>	<del>2</del>	<del>13</del>
<del>10</del>	5	16	3
<del>15</del>	4	9	6

1	12	7	14
8	11	2	13
10	3	16	5
15	6	9	4

(6)  $A_6$

10

11

12

13

<del>1</del>	8	13	12
15	<del>14</del>	3	7
4	5	<del>16</del>	9
14	10	2	6

$A_4$  (2, -1) ✓  
 $B_1$  (2, 1) ✓

1	12	13	8
15	6	3	10
4	9	16	5
14	7	2	11

(1)  $B_1$

1	8	13	12
15	10	3	6
4	5	16	9
14	11	2	7

(2)  $B_2$

<del>1</del>	14	<del>2</del>	12
15	<del>11</del>	<del>13</del>	7
<del>4</del>	5	16	3
<del>14</del>	10	2	6

17  $C_1$  (1, 2)  
 $D_1$  (-1, 2)

18

19

20

1	14	11	8
15	4	5	10
6	9	16	3
12	7	2	13

(3)  $B_3$

1	14	7	12
15	4	9	6
10	5	16	3
8	11	2	13

(4)  $B_4$

1	12	7	14
15	6	9	4
10	3	16	5
8	13	2	11

(5)  $B_5$

24

25

26

27

1	8	11	14
15	10	5	4
6	3	16	9
12	13	2	7

(6)  $B_6$

1	14	4	15
8	11	5	10
13	2	16	3
12	7	9	6

(1)  $C_1$

1	14	4	15
12	7	9	6
13	2	16	3
8	11	5	10

(2)  $C_2$

1	8	10	15
14	11	5	4
7	2	16	9
12	13	3	6

(3)  $C_3$

THURSDAY

FRIDAY

SATURDAY

MAIN MEETINGS

1	12	6	15
14	7	9	4
11	2	16	5
8	13	3	10

(4) C<sub>4</sub>

1	8	10	15
12	13	3	6
7	2	16	9
14	11	5	4

(5) C<sub>5</sub>

1	12	6	15
8	13	3	10
11	2	16	5
14	7	9	4

(6) C<sub>6</sub>

DATE TIME PLACE

1 FR

2

3 SU

4

5

6

7

8

10

9

10 SU

11

12

13

14

15

16

17 SU

18

19

20

21

22

23

24 SU

25

26

27

28

29

30 SA

1	15	6	12
8	10	3	13
11	5	16	2
14	4	9	7

1	6
8	3
5	2
4	7

7

1	15	4	14
8	10	5	11
13	3	16	2
12	6	9	7

(1) D<sub>1</sub>

8

1	15	4	14
12	6	9	7
13	3	16	2
8	10	5	11

(2) D<sub>2</sub>

9

1	15	10	8
14	4	5	11
7	9	16	2
12	6	3	13

(3) D<sub>3</sub>

14

1	15	6	12
14	4	9	7
11	5	16	2
8	10	3	13

(4) D<sub>4</sub>

15

1	15	10	8
12	6	3	13
7	9	16	2
14	4	5	11

(5) D<sub>5</sub>

16

1	15	6	12
8	10	3	13
11	5	16	2
14	4	9	7

(6) D<sub>6</sub>

21

1	2	3
4	5	6
7	8	9

22

12	1	8	13
9	14	11	2
7	4	5	16
6	15	10	3

23

8	1	12	13
11	14	7	2
5	4	9	16
10	15	6	3

28

a	b	c	d
e	f	g	h
i	j	k	l
m	n	o	p

29

a	b	i	j
c	d	k	l
e	f	m	n
g	h	o	p

30

a	b	e	f
c	d	g	h
i	j	m	n
k	l	o	p

NEXT MONTH — MAY 1977

SUN MON TUE WED THU FRI SAT

1 2 3 4 5 6 7

8 9 10 11 12 13 14

15 16 17 18 19 20 21

22 23 24 25 26 27 28

29 30 31

May 1977

SUNDAY

MONDAY

TUESDAY

WEDNESDAY

(20)

$$m_1 + m_2 + a_1 + a_2 = 2x + w$$

$$a+b = 9/2$$

$$a+k = 5/2$$

$$f+p = 5$$

$$b=k$$

$$a=f$$

$$a+k+n+h = 5$$

20.05  
0.50  
19.55

1

a	r	c	d
e	f	g	h
i	j	k	l
m	n	o	p

2

$$f+g+k+m = 34 \quad (1)$$

$$a+d+m+p = 34 \quad (2)$$
~~$$m+p = b+c$$~~

$$m+p = b+c \quad (3)$$

$$b+c+o+n = 54 \quad (4)$$

$$e+h = f+h \quad (5)$$

$$a+h = g+f \quad (6)$$

3

$$A+B+C+D = 17$$

$$A+B = 2d$$

$$A+B+C = 17$$

$$B+C+D = 17$$

$$B+C+D = 17$$

$$B+C+D = 17$$

$$a=b$$

4

$$A+C+D = 17$$

$$B+A+C = 17$$

$$B+C+D = 17$$

$$B+C+D = 17$$

$$a=b$$

8

$$e+f+g+h = 5$$

$$c+f+k+l = 5$$

$$e+l+h = 5$$

$$a+d+m+p = 5$$

$$a+d+h+c = 5$$

$$e+h = f+h$$

9

A-a	C+a+E	B+b-C	D-b
D+a-d	B	C	A-a+d
C-b+d	A	D	B+b-d
B+b	D-a-c	A-b+c	C+a

Bergsholm

10

$$A+C = 17$$

$$B+D = 17$$

$$A+B = 17$$

$$A+C = 17$$

$$B+D = 17$$

11

$$C+D+2a+c-d = 34$$

$$2a+c-d = 0$$

$$B+C+a = 17$$

$$A+D-b = 17$$

$$a=b$$

15

$$a+f+k+p = 5$$

$$f+k+g+j = 5$$

$$a+b = g+j$$

$$A+B = 17$$

$$A+C = 17$$

$$D+a = 17$$

$$B+C+D = 17$$

$$A+C = 17$$

16

$$A+B = a$$

$$A+D-a = B+C+a = 17$$

$$A+D = B+D = 17$$

$$D-a = C$$

$$C+a = D$$

$$A+D-a = 17$$

$$A+D-b = 17$$

17

1	8	13	12
14	11	2	7
2	5	16	9
15	10	3	6

$$B+C+D = 17$$

$$B+C+D = 17$$

$$a=b$$

18

$$A+D-a = 17$$

$$A+a = 17$$

$$D-a = C$$

$$B+C+a = 17$$

$$A+C = 17$$

$$B+a = A$$

22

1	5	9	13
2	6	10	14
3	7	11	15
4	8	12	16

23

16	5	9	4
2	11	7	14
3	10	6	15
13	8	12	1

$$a_{33}, e_{14}, a_{31}, a_{12}$$

24

$$T = \begin{pmatrix} 1 & 2 \\ 2 & 1 \end{pmatrix}$$

$$k = i+2j$$

$$l = 2i+j$$

$$3i = 2l-k$$

$$3j = 2k-l$$

$$-\frac{2}{3} \frac{2}{3} \frac{1}{3}$$

25

$$i = \frac{1}{3}(2l-k)$$

$$j = \frac{1}{3}(2k-l)$$

$$v_{11} \rightarrow a_{33} (1, 2)$$

$$v_{12} \rightarrow a_{14}$$

$$v_{14} \rightarrow a_{12} (-1, -1)$$

$$v_{14} \rightarrow a_{41}$$

$$w(-1, 1)$$

29

1	8	13	12
14	11	2	7
4	5	16	9
15	10	3	6

$$\rightarrow f_{15}$$

30

1	12	13	8
14	7	2	11
4	9	16	5
15	10	3	10

$$\rightarrow$$

31

4	2
6	8
5	7

16	8	4	12
15	7	5	11
13	5	1	9
14	6	2	10

$$\rightarrow f_{15}$$

$$23$$

$$25$$

Choir and staff ~~4x21 squares~~

(21)

May 1977

THURSDAY

FRIDAY

SATURDAY

MAIN MEETINGS

**5**

5	13	9	1
6	14	10	2
7	15	11	3
8	16	12	4

dosudwork

**6**

4	13	9	8
6	11	15	2
7	10	14	3
1	16	12	5

**7**

9	8	4	13
15	2	6	11
16	3	4	10
12	5	1	16

**12**

1	2	9	10
3	4	11	12
5	6	13	14
7	8	15	16

**13**

1	2	9	8
3	4	6	12
5	11	13	14
10	8	14	16

**14**

16	3	5	10
2	13	11	8
9	6	4	15
7	12	14	1

5	10	16	3
11	8	2	13
4	15	9	6
14	1	7	12

**19**

1	2	5	6
3	4	7	8
9	10	13	14
11	12	15	16

**20**

1	14	7	12
8	11	2	13
10	5	16	3
15	4	9	6

**21**

16	12	10	14
15	11	9	13
7	3	1	5
8	4	2	6

→ p. 52

**26**

1	14	7	12
8	11	2	13
10	5	16	3
15	4	9	6

**27**

16	12	10	14
15	11	9	13
7	3	1	5
8	4	2	6

p. 52

**28**

1	8	11	14
12	13	2	7
6	9	16	9
15	10	5	4

(21) 20 19

- ✓ 1, 2, 15, 16
- ✓ 1, 3, 14, 16
- ✓ 1, 4, 13, 16
- ✓ 1, 4, 14, 15
- ✓ 1, 5, 12, 16
- ✓ 1, 5, 13, 15
- ✓ 1, 6, 11, 16

- ✓ 1, 6, 12, 15
- ✓ 1, 6, 13, 14
- ✓ 1, 7, 10, 16
- ✓ 1, 7, 11, 15
- ✓ 1, 7, 12, 14
- ✓ 1, 8, 9, 16
- ✓ 1, 8, 10, 15

- ✓ 1, 8, 11, 14
- ✓ 1, 8, 12, 13
- ✓ 1, 9, 8, 16
- ✓ 1, 9, 10, 14
- ✓ 1, 9, 11, 13
- ✓ 1, 10, 7, 16
- ✓ 1, 10, 8, 15

- ✓ 1, 10, 9, 14
- ✓ 1, 10, 11, 12
- ✓ 1, 11, 6, 16
- ✓ 1, 11, 7, 15
- ✓ 1, 11, 8, 14
- ✓ 1, 11, 9, 13
- ✓ 1, 11, 10, 12

- ✓ 1, 12, 5, 16
- ✓ 1, 12, 6, 15
- ✓ 1, 12, 7, 14
- ✓ 1, 12, 8, 13
- ✓ 1, 12, 10, 11
- ✓ 1, 13, 4, 16
- ✓ 1, 13, 5, 15

- ✓ 1, 13, 6, 14
- ✓ 1, 13, 8, 12
- ✓ 1, 13, 9, 11
- ✓ 1, 14, 3, 16
- ✓ 1, 14, 4, 15
- ✓ 1, 14, 6, 13
- ✓ 1, 14, 7, 12
- ✓ 1, 14, 8, 11
- ✓ 1, 14, 9, 10

1, 14, 9, 10

DATE	TIME	PLACE
1 SU	16	8 4 12
2	15	4 3 1
3	14	6 2 10
4	13	5 1 9
5		
6		
7		

8 SU

9	12	10	16	14
10	11	9	15	13
11	4	2	8	6
12	3	1	7	5

- 13 (1, 15, 2, 16)
- 14 (1, 15, 4, 14)
- 15 SU (1, 15, 5, 13)
- 16 (1, 15, 6, 12)
- 17 (1, 15, 7, 11)
- 18 (1, 15, 8, 10)
- 19 (1, 16, 2, 19)
- 20 (1, 16, 3, 14)
- 21 (1, 16, 4, 13)
- 22 SU (1, 16, 5, 12)

23

24	16	14	6	8
25	15	13	5	7
26	11	9	1	3
27	12	10	2	4

28 (1, 16, 6, 11)

29 SU (1, 16, 7, 10)

30 (1, 16, 8, 9)

31 TU

NEXT MONTH — JUNE 1977

SUN	MON	TUE	WED	THU	FRI	SAT
			1	2	3	4
5	6		8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

25 26 27 28 29  
**June 1977** 26

23 24 25 26 27 28 29  
 6, 10, 19 21

14 20 21 22 23 24 25 26 27 28 29  
 3, 10, 11, 10 14 (20)

(22) 29

**SUNDAY**

**MONDAY**

**TUESDAY**

**WEDNESDAY**

- ✓ 2, 3, 13, 16
- ✓ 2, 3, 14, 15
- ✓ 2, 4, 12, 16
- ✓ 2, 4, 13, 15
- ✓ 2, 5, 11, 16
- ✓ 2, 5, 12, 15
- ✓ 2, 5, 13, 14

- ✓ 3, 4, 11, 16
- ✓ 3, 4, 12, 15
- ✓ 3, 4, 13, 14
- ✓ 3, 5, 10, 16
- ✓ 3, 5, 11, 15
- ✓ 3, 5, 12, 14
- ✓ 3, 6, 9, 16
- ✓ 3, 6, 10, 15

- 4, 8, 6, 16
- 4, 8, 7, 15
- ✓ 4, 8, 9, 13
- ✓ 4, 8, 10, 12
- 4, 9, 5, 16
- 4, 9, 6, 15
- 4, 9, 7, 14
- 4, 9, 8, 13

1

1	12	13	8
14	7	2	11
4	9	16	5
15	6	3	10

- ✓ 5, 2, 6, 10, 16
- ✓ 2, 6, 11, 15
- ✓ 2, 6, 12, 14
- ✓ 2, 7, 9, 16
- ✓ 2, 7, 10, 15
- ✓ 2, 7, 11, 14
- ✓ 2, 7, 12, 13

- ✓ 6, 3, 6, 11, 14
- ✓ 3, 6, 12, 13
- ✓ 3, 7, 8, 16
- ✓ 3, 7, 9, 15
- ✓ 3, 7, 10, 14
- ✓ 3, 7, 11, 13
- 3, 8, 7, 16

- ✓ 7, 9, 10, 11 (15)
- ✓ 5, 6, 7, 16
- ✓ 5, 6, 8, 15
- ✓ 5, 6, 9, 14
- ✓ 5, 6, 10, 13
- ✓ 5, 6, 11, 12

8

7	8	10	15
12	13	3	6
7	2	16	9
14	11	5	4

- ✓ 12, 2, 8, 9, 15
- ✓ 2, 8, 10, 14
- ✓ 2, 8, 11, 13
- 2, 9, 7, 16
- 2, 9, 8, 15
- ✓ 2, 9, 10, 13
- ✓ 2, 9, 11, 12

- ✓ 13, 3, 8, 9, 14
- ✓ 3, 8, 10, 13
- ✓ 3, 8, 11, 12
- 3, 9, 6, 16
- 3, 9, 7, 15
- 3, 9, 8, 14
- ✓ 3, 9, 10, 12

- ✓ 14, 5, 7, 8, 14
- ✓ 5, 7, 9, 13
- ✓ 5, 7, 10, 12
- ✓ 5, 8, 9, 12
- ✓ 5, 8, 10, 11
- 5, 9
- 5, 10 (10)

15

0	4	2	3
4	1	3	2
3	2	4	1
2	3	1	4

0	4	8	12
8	12	0	4
4	0	12	8
12	8	4	0

- 19, 2, 10, 6, 16
- 2, 10, 7, 15
- 2, 10, 8, 14
- 2, 10, 9, 13
- 19

- 20, 3, 10, 5, 16 (18)
- ✓ 4, 5, 9, 16
- ✓ 4, 5, 10, 15
- ✓ 4, 5, 11, 14
- ✓ 4, 5, 12, 13
- ✓ 4, 6, 8, 16

- ✓ 21, 6, 7, 8, 13
- ✓ 6, 7, 9, 12
- ✓ 6, 7, 10, 11 (4)
- ✓ 6, 8, 9, 11
- 6, 9
- ✓ 7, 8, 9, 10 (1)
- 8, 9, 10, 11

22

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

2, 1, 3, 4  
3, 4, 2, 1

26 (20)

- ✓ 27, 4, 6, 9, 15
- ✓ 4, 6, 10, 14
- ✓ 4, 6, 11, 13
- ✓ 4, 7, 8, 15
- ✓ 4, 7, 9, 14
- ✓ 4, 7, 10, 13
- ✓ 4, 7, 11, 12

28 57  
 $19 + 19 + 18 + 15 + 10 + 4 = 85$   
 86 magis pens  
 as in Kravtchik

29

0	12	0	12
4	8	4	8
12	0	12	0
8	4	8	4

0, 4, 12, 8  
12, 8, 0, 4  
0, 4, 12, 8  
12, 8, 0, 4

23)

June 1977

THURSDAY

FRIDAY

SATURDAY

MAIN MEETINGS

**2**

1	16		

**3**

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

**4**

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

DATE	TIME	PLACE
1 WE	8	12 0 4
2	0	4 8 12
3	12	8 4 0
4	4	0 12 8
5 SU	11	

**9**

1	8	13	12
14	11	2	7
4	5	16	9
15	10	3	6

**10**

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

**11**

4	0	12	8
12	8	4	0
0	4	8	12
8	12	0	4

6		
7	9	14 4 7
8	3	8 10 13
9	16	11 5 2
10	6	1 15 12

**16**

1	4	1	4
1	4	1	4
4	1	4	1
4	1	4	1

**17**

4	0	8	12
8	12	4	0
4	0	8	12
8	12	4	0

**18**

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

11		
12 SU	2	4 1 13
13	1	3 2 4
14	4	2 3 1
15	3	1 4 2

**23**

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

**24**

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

**25**

8	8	4	12
4	12	0	8
8	0	12	4
12	4	8	0

16		
17	4	12 0 8
18	0	8 4 12
19 SU	12	4 8 0
20	8	0 12 4

21	5	14 4 11
22	3	12 6 13
23	16	7 9 2
24	10	1 15 8

**30**

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

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

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

25	1	10 8 15
26 SU	7	16 2 9
27	12	3 13 6
28	4	5 11 4

29		
30 TH		

NEXT MONTH — JULY 1977

SUN	MON	TUE	WED	THU	FRI	SAT
31					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

2+1

July 1977

SUNDAY

MONDAY

TUESDAY

WEDNESDAY

(24)

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

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

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

31

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

9	2	16	7
15	6	10	1
4	11	5	14
6	13	3	12

13	6	12	3
11	4	14	5
8	15	1	10
2	9	7	16

13	10	8	3
7	4	14	9
12	15	1	6
2	5	11	16

3

4

5

6

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

8	0	12	4
12	4	8	0
0	8	4	12
4	12	0	8

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

12	4	8	0
8	0	12	4
4	12	0	8
0	8	4	12

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

12	8	4	0
4	0	12	8
8	12	0	4
0	4	8	12

1	8	10	15
7	2	16	9
12	13	3	6
14	11	5	4

8+16+10+6

10  $8+9+8+7+6+5+4$

1	10	8	15
7	16	2	9
12	3	13	6
14	5	11	4

11

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

12

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

13

0	4	8	12
8	12	0	4
4	0	12	8
12	8	4	0

= diagonal

17

- (1,1), (1,2), (1,3)
- (2,2), (2,3), (2,4)
- (3,3), (3,4), (3,5)

$8+7+5+4+3+2+1$   
 $15+13+11+9+7+5+3+1 = 64$

18

- (1,8)
- (2,8)
- (3,8)

19

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

20

0	8	4	12
4	12	0	8
8	0	12	4
12	4	8	0

24

1	7	10	16
10	16	1	7
9	1	2	4
4	2	1	3
2	4	3	1
1	3	4	2

25

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

26

1	6	15	12
11	16	2	5
8	3	13	10
14	9	7	4
6	1	15	12
16	11	5	2
3	8	10	13
9	14	7	4
5	8	13	10

27

5	2	16	11
15	12	6	1
4	7	9	14
10	13	3	8
2	5	11	16
12	15	1	6
7	4	14	9
13	10	8	3
4	7	14	9

THURSDAY	FRIDAY	SATURDAY	MAIN MEETINGS																																																																																																										
<p>(27)</p> <table border="1" style="width: 100%; text-align: center;"> <tr><td>2</td><td>4</td><td>3</td><td>1</td></tr> <tr><td>1</td><td>3</td><td>4</td><td>2</td></tr> <tr><td>3</td><td>1</td><td>2</td><td>4</td></tr> <tr><td>4</td><td>2</td><td>1</td><td>3</td></tr> </table> <p>(d)</p>	2	4	3	1	1	3	4	2	3	1	2	4	4	2	1	3	<p>(27)</p> <table border="1" style="width: 100%; text-align: center;"> <tr><td>2</td><td>4</td><td>1</td><td>3</td></tr> <tr><td>1</td><td>3</td><td>2</td><td>4</td></tr> <tr><td>4</td><td>2</td><td>3</td><td>1</td></tr> <tr><td>3</td><td>1</td><td>4</td><td>2</td></tr> </table> <p>(d)</p>	2	4	1	3	1	3	2	4	4	2	3	1	3	1	4	2	<p>2</p> <table border="1" style="width: 100%; text-align: center;"> <tr><td>2</td><td>8</td><td>13</td><td>11</td></tr> <tr><td>9</td><td>15</td><td>6</td><td>4</td></tr> <tr><td>16</td><td>10</td><td>3</td><td>5</td></tr> <tr><td>7</td><td>1</td><td>12</td><td>14</td></tr> </table> <p>2</p>	2	8	13	11	9	15	6	4	16	10	3	5	7	1	12	14	<p>DATE</p> <p>TIME</p> <p>PLACE</p>																																																										
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<p>21 (26)</p> <table border="1" style="width: 100%; text-align: center;"> <tr><td>1</td><td>6</td><td>12</td><td>15</td></tr> <tr><td>11</td><td>16</td><td>2</td><td>5</td></tr> <tr><td>8</td><td>3</td><td>13</td><td>10</td></tr> <tr><td>14</td><td>9</td><td>7</td><td>4</td></tr> </table>	1	6	12	15	11	16	2	5	8	3	13	10	14	9	7	4	<p>22</p> <table border="1" style="width: 100%; text-align: center;"> <tr><td>1</td><td>2</td><td>4</td><td>3</td></tr> <tr><td>3</td><td>4</td><td>2</td><td>1</td></tr> <tr><td>4</td><td>3</td><td>1</td><td>2</td></tr> <tr><td>2</td><td>3</td><td>4</td><td>1</td></tr> </table> <p>(d)</p> <table border="1" style="width: 100%; text-align: center;"> <tr><td>0</td><td>4</td><td>8</td><td>12</td></tr> <tr><td>8</td><td>12</td><td>0</td><td>4</td></tr> <tr><td>4</td><td>0</td><td>12</td><td>8</td></tr> <tr><td>12</td><td>8</td><td>4</td><td>0</td></tr> </table>	1	2	4	3	3	4	2	1	4	3	1	2	2	3	4	1	0	4	8	12	8	12	0	4	4	0	12	8	12	8	4	0	<p>23</p> <table border="1" style="width: 100%; text-align: center;"> <tr><td>1</td><td>2</td><td>3</td><td>4</td></tr> <tr><td>3</td><td>4</td><td>1</td><td>2</td></tr> <tr><td>2</td><td>1</td><td>4</td><td>3</td></tr> <tr><td>4</td><td>3</td><td>2</td><td>1</td></tr> </table> <p>(d)</p>	1	2	3	4	3	4	1	2	2	1	4	3	4	3	2	1	<p>24 SU</p> <p>25</p> <p>26</p> <p>27</p> <p>28</p> <p>29</p> <p>30</p> <p>31 SU</p>																																										
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<p>28 (27)</p> <table border="1" style="width: 100%; text-align: center;"> <tr><td>1</td><td>6</td><td>12</td><td>15</td></tr> <tr><td>11</td><td>16</td><td>2</td><td>5</td></tr> <tr><td>14</td><td>9</td><td>7</td><td>4</td></tr> <tr><td>8</td><td>3</td><td>13</td><td>10</td></tr> </table>	1	6	12	15	11	16	2	5	14	9	7	4	8	3	13	10	<p>29</p> <table border="1" style="width: 100%; text-align: center;"> <tr><td>1</td><td>2</td><td>4</td><td>3</td></tr> <tr><td>3</td><td>4</td><td>2</td><td>1</td></tr> <tr><td>2</td><td>1</td><td>3</td><td>4</td></tr> <tr><td>4</td><td>3</td><td>1</td><td>2</td></tr> </table> <p>(d)</p> <table border="1" style="width: 100%; text-align: center;"> <tr><td>0</td><td>4</td><td>8</td><td>12</td></tr> <tr><td>8</td><td>12</td><td>0</td><td>4</td></tr> <tr><td>12</td><td>8</td><td>4</td><td>0</td></tr> <tr><td>4</td><td>0</td><td>12</td><td>8</td></tr> </table>	1	2	4	3	3	4	2	1	2	1	3	4	4	3	1	2	0	4	8	12	8	12	0	4	12	8	4	0	4	0	12	8	<p>30</p> <table border="1" style="width: 100%; text-align: center;"> <tr><td>1</td><td>2</td><td>3</td><td>4</td></tr> <tr><td>3</td><td>4</td><td>1</td><td>2</td></tr> <tr><td>4</td><td>3</td><td>2</td><td>1</td></tr> <tr><td>2</td><td>1</td><td>4</td><td>3</td></tr> </table> <p>(d)</p>	1	2	3	4	3	4	1	2	4	3	2	1	2	1	4	3	<p>NEXT MONTH — AUGUST 1977</p> <table border="1" style="width: 100%; text-align: center;"> <tr> <td>SUN</td><td>MON</td><td>TUE</td><td>WED</td><td>THU</td><td>FRI</td><td>SAT</td> </tr> <tr> <td></td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td> </tr> <tr> <td>7</td><td>8</td><td>9</td><td>10</td><td>11</td><td>12</td><td>13</td> </tr> <tr> <td>14</td><td>15</td><td>16</td><td>17</td><td>18</td><td>19</td><td>20</td> </tr> <tr> <td>21</td><td>22</td><td>23</td><td>24</td><td>25</td><td>26</td><td>27</td> </tr> <tr> <td>28</td><td>29</td><td>30</td><td>31</td><td></td><td></td><td></td> </tr> </table>	SUN	MON	TUE	WED	THU	FRI	SAT		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31			
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11	16	2	5																																																																																																										
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2	1	4	3																																																																																																										
SUN	MON	TUE	WED	THU	FRI	SAT																																																																																																							
	1	2	3	4	5	6																																																																																																							
7	8	9	10	11	12	13																																																																																																							
14	15	16	17	18	19	20																																																																																																							
21	22	23	24	25	26	27																																																																																																							
28	29	30	31																																																																																																										

August 1977

SUNDAY

(62)

1	6	15	12
11	16	5	2
8	3	10	13
14	9	4	7

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

(d)

MONDAY

1

0	4	12	8
8	12	4	0
4	0	8	12
12	8	0	4

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

(d)

TUESDAY

2 (89)

0	7	14	12
10	16	5	3
15	9	4	6
8	2	11	13

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

(d)

WEDNESDAY

3

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

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

(d)

(63) 7

1	6	15	12
11	16	5	2
14	9	4	7
8	3	10	13

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

(d)

8

0	4	12	8
8	12	4	0
12	8	0	4
4	0	8	12

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

(d)

9 (213)

2	3	13	16
14	15	1	4
7	6	12	9
11	10	8	5

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

(d)

10

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

(d)

(82) 14

1	7	12	14
10	16	3	5
8	2	13	11
15	9	6	4

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

(d)

15

0	4	8	12
8	12	0	4
4	0	12	8
12	8	4	0

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

(d)

16 (2147)

2	3	13	16
14	15	1	4
11	10	8	5
7	6	12	9

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

(d)

17

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

(d)

(83) 21

1	7	12	14
10	16	3	5
15	9	6	4
8	2	13	11

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

(d)

22

0	4	8	12
8	12	0	4
12	8	4	0
4	0	12	8

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

(d)

23 (233)

2	3	16	13
14	15	4	1
7	6	9	12
11	10	5	8

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

(d)

24

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

(d)

28 (89)

1	7	14	12
10	16	5	3
8	2	11	13
15	9	4	6

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

(d)

29

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

(d)

30 (234)

2	3	16	13
14	15	4	1
11	10	5	8
7	6	9	12

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

(d)

31

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

(d)

THURSDAY

FRIDAY

SATURDAY

MAIN MEETINGS

4 (246)

2	5	11	16
12	15	1	6
7	4	14	9
13	10	8	3

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

(a)

5

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

(b) (a)

6 (317)

2	8	11	13
9	15	4	6
16	10	5	3
7	1	14	12

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

(d)

DATE TIME PLACE

1 MO

2	1	2	3	4
3	3	4	1	2
4	4	3	2	1
5	2	1	4	3

(d)

11 (247)

2	5	11	16
12	15	1	6
13	10	8	3
7	4	14	9

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

(d)

12

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

(d)

13 (323)

2	8	13	11
9	15	6	4
7	1	12	14
16	10	3	5

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

(d)

7 SU

8

9	1	2	4	3
10	3	4	2	1
11	2	1	3	4
12	4	3	1	2

(d)

18 (269)

2	5	16	11
12	15	6	1
7	4	9	14
13	10	3	8

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

(d)

19

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

(d)

20 (324)

2	8	13	11
9	15	6	4
16	10	3	5
7	1	12	14

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

(n)

14 SU

15

16

17	1	2	4	3
18	3	4	2	1
19	4	3	1	2
20	2	1	3	4

(a)

25 (270)

2	5	16	11
12	15	6	1
13	10	3	8
7	4	9	14

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

(n)

26

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

(a)

27 (421)

3	2	13	16
15	14	1	4
6	7	12	9
10	11	8	5

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

(d)

21 SU

22

23

24

25

26	1	1	4	4
27	4	4	1	1
28 SU	2	2	3	3
29	3	3	2	2

(d)

(316)

2	8	11	13
9	15	4	6
7	1	14	12
16	10	5	3

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

(a)

(422)

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

(n)

3	2	13	16
15	14	1	4
10	11	8	5
6	7	12	9

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

(d)

31 WE

NEXT MONTH — SEPTEMBER 1977

SUN	MON	TUE	WED	THU	FRI	SAT
					2	3
	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

(d)

September 1977

SUNDAY

MONDAY

TUESDAY

WEDNESDAY

(445)

3	2	16	13
15	14	4	1
6	7	9	12
10	11	5	8

=

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

(d)

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

(d)

(503)

3	8	10	13
9	14	4	7
16	11	5	2
6	1	15	12

=

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

(d)

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

(d)

(446)4

3	2	4	13
15	14	4	1
10	11	5	8
6	7	9	12

=

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

(d)

5

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

(d)

6(505)

3	8	13	10
9	14	7	4
6	1	12	15
16	11	2	5

=

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

(d)

7

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

(d)

(450)1

3	5	10	16
12	14	1	7
13	11	8	2
6	4	15	9

=

3	1	2	4
4	2	1	3
7	3	4	2
2	4	3	1

(d)

12

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

(d)

13(506)

3	8	13	10
9	14	7	4
16	11	2	5
6	1	12	15

=

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

(n)

14

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

(a)

18  
(464)

3	5	16	10
12	14	7	1
6	4	9	15
13	11	2	8

=

19

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

(d)

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

(d)

20(583)

4	1	14	15
16	13	2	3
5	8	11	10
9	12	7	6

=

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

(d)

21

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

(d)

25(465)

3	5	16	10
12	14	7	1
13	11	2	8
6	4	9	15

=

26

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

(n)

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

(d)

27(584)

4	1	14	15
16	13	2	3
9	12	7	6
5	8	11	10

=

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

(d)

28

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

(d)

THURSDAY

FRIDAY

SATURDAY

MAIN MEETINGS

1 (591)

4	1	15	14
16	13	3	2
5	8	10	11
9	12	6	7

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

(d)

2

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

(d)

3 (668)

4	7	9	14
10	13	3	8
15	12	6	1
5	2	16	11

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

(d)

DATE	TIME	PLACE
1 TH	1	2 3 4
2	3	4 1 2
3	4	3 2 1
4 SU	2	1 4 3
5		(d)
6		
7		
8		
9		
10		
11 SU	4	3 1 2
12	2	1 3 4
13		(d)
14		
15		
16		
17		
18 SU	4	3 2 1
19	1	2 3 4
20	3	4 1 2
21		(n)
22		
23		
24		
25 SU	2	1 4 3
26	4	3 2 1
27	1	2 3 4
28	3	4 1 2
29		(n)
30 FR		

8 (592)

4	1	15	14
16	13	3	2
9	12	6	7
5	8	10	11

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

(d)

9

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

(d)

10 (679)

4	7	14	9
10	13	8	3
15	12	1	6
5	2	11	16

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

(n)

15 (648)

4	6	9	13
11	13	2	8
10	16	5	3
1	7	14	12

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

(d)

16

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

(d)

17 (768)

5	2	16	11
15	12	6	1
4	7	9	14
10	13	3	8

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

(a)

22 (661)

4	6	15	9
11	13	8	2
5	3	10	16
14	12	1	7

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

(d)

23

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

(d)

24 (779)

5	3	16	10
14	12	7	1
4	6	9	15
11	13	2	8

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

(a)

29 (662)

4	6	15	9
11	13	8	2
14	12	1	7
5	3	10	16

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

(n)

30

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

(d)

(678)

4	7	14	9
10	13	8	3
5	2	11	16
15	12	1	6

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

(d)

NEXT MONTH — OCTOBER 1977

SUN	MON	TUE	WED	THU	FRI	SAT
30	31	1	2	3	4	5
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29

October 1977

SUNDAY

MONDAY

TUESDAY

WEDNESDAY

30 (818)

6	1	15	12
16	11	15	2
3	8	10	13
9	14	4	7

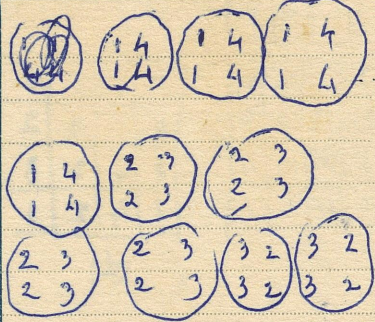
31

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

(a)

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

(n)



2 (844)

6	4	15	9
13	11	8	2
3	5	10	16
12	14	1	7

3

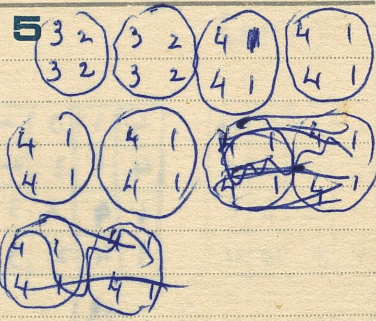
2	4	3	1
1	3	4	2
3	1	2	4
4	2	1	3

(a)

4

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

(n)



9 (21)

1	4	14	15
13	16	2	3
8	5	11	10
12	9	7	6

10

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

(a)

11

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

(a)

12

1432 11414  
 1432 4411  
 4123 3322  
 4123 2233  
 14,15,14  
 13,16,3,2  
 12,9,6,7  
 8,5,10,11

16 (22)

1	4	14	15
13	16	2	3
12	9	7	6
8	5	11	10

17

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

(a)

18

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

(a)

19

12+12+10+10  
 +2+2=48

23

(a)+(a) = 32  
 (a)+(n) } = 16  
 (n)+(a)

24

1	1	4	1	4	1	1	1
4	4	4	1	1	1	1	4

(a)+(n)

2	2	3	2	3	3	2	3
3	3	3	2	2	2	2	3

25

actual number of 32 - 16 use type (iv)  
 16 " " (iii)  
 16 " " type (ii)

26

The actual description of the derivation of these 48 original types would be too long-winded - it is preferable to use the simple principle of derivation by interchanges of middle squares of 2x2 squares

Type IV

24, 25, 30, 31, 60, 61, 64, 65, 84, 85, 92, 93  
 140, 141, 146, 147, 150, 162, 163, 191, 192, 195, 196

(31)

October 1977

MAIN MEETINGS

THURSDAY

FRIDAY

SATURDAY = 24

0	1	14	15
16	13	3	2
7	6	12	9
10	11	5	8

21, 22, 27, 28, 56, 57

1	4	2	5
4	1	3	2
3	2	4	1
2	3	1	4

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

62, 63, 82, 83, 89, 90  
 (21)  
 1, 13, 8, 12  
 14, 9, 11, 7  
 3, 15, 6, 10

6

1	4	14	15
16	13	3	2
10	10	8	5
6	7	9	12

1	4	15	14
16	13	2	3
6	7	12	9
10	11	5	8

7 (1911)

1	13	8	12
16	4	9	5
10	6	15	3
7	11	2	14

8 (192) (192)

1	13	8	12
16	4	9	5
10	6	15	3
7	11	2	14

(1) Both same without doing r → c

13 (196)

1	13	12	8
16	4	5	9
7	14	15	2
10	6	3	11

1	15	4	14
16	2	13	3
6	12	7	9
11	5	10	8

14 (22) long → abs.

1	13	12	15
4	11	9	6
14	2	7	11
15	3	6	10

15 (22) ms → abs.

1	13	12	8
16	4	5	9
14	2	11	7
15	3	10	6

20

1, 13, 12, 8  
 4, 16, 9, 5  
 14, 2, 7, 11  
 15, 3, 10, 6  
 1, 13, 12, 8  
 4, 16, 9, 5  
 14, 2, 7, 11  
 15, 3, 10, 6

21 (21)

1	4	14	15
13	16	2	3
8	5	11	10
12	9	7	6

(24) IV →

1	4	11	15
16	13	3	2
7	6	10	9
10	11	5	8

22 (27)

1	4	15	14
13	16	3	2
8	5	10	11
12	9	6	7

1, 13, 8, 12  
 16, 4, 9, 5  
 8, 5, 10, 11  
 12, 9, 6, 7  
 15, 3, 10, 6  
 2, 14, 7, 11

27 (195)

1	13	12	8
16	4	5	9
6	10	15	3
11	7	2	14

1, 13, 12, 8  
 4, 16, 9, 5  
 14, 2, 7, 11  
 15, 3, 10, 6  
 1, 13, 12, 8  
 4, 16, 9, 5  
 14, 2, 7, 11  
 15, 3, 10, 6

28 (22)

1	4	14	15
13	16	2	3
12	9	7	6
8	5	11	10

1, 4, 14, 15  
 16, 13, 3, 2  
 12, 9, 7, 6  
 5, 8, 10, 11  
 1, 13, 12, 8  
 4, 16, 9, 5  
 14, 2, 7, 11  
 15, 3, 10, 6

29 (26)

1	4	15	14
13	16	3	2
12	9	6	7
8	5	10	11

1, 4, 15, 14  
 16, 13, 3, 2  
 12, 9, 6, 7  
 8, 5, 10, 11  
 1, 4, 15, 14  
 16, 13, 3, 2  
 12, 9, 6, 7  
 8, 5, 10, 11

DATE TIME PLACE

- 1 SA
- 2 SU (22) → (196)
- 3 (28) → (195)
- 4 (21) → (192)
- 5 (27) → (191)
- 6
- 7

Rule 4 (ii) from 4  
 Change instructions of the 28 diagonals  
 subchange lower ones  
 9, 8, 1, 2, 3, 4  
 subchange 2, 3, 4

16 SU	1	13	12	8
17	16	4	5	9
18	6	10	15	3
19	11	7	2	14

20	1	13	12	8
21	16	4	5	9
22	15	3	6	10
23 SU	14	11	7	2

24 16 ↔ 4, 5 ↔ 9  
 8 ↔ 2, 11  
 (28) ms → abs

27	1	13	12	8
28	4	16	9	5
29	15	3	6	10
30 SU	14	11	7	2

Here check 3 → 11

31 MO 15, 3, 10, 6, 10, 15, 3  
 2, 14, 11, 7  
 & fill up 4 → 11

NEXT MONTH — NOVEMBER 1977

SUN	MON	TUE	WED	THU	FRI	SAT
1	2	3	4	5		
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

SUNDAY

MONDAY

TUESDAY

WEDNESDAY

(33)

1	4	16	13
14	15	3	2
11	10	6	7
8	5	9	12

(196)  $r \leftrightarrow c$

1	6	7	10
13	4	11	6
12	5	14	3
8	9	2	15

1

(1) not semi-narrk

1	2	15	16
12	14	3	5
13	7	10	4
8	11	6	9

2

(73)  $\bar{V}$  semi-narrk

1	7	10	16
12	14	3	5
8	2	15	9
13	11	6	4

6

(34)

1	4	16	13
15	14	2	3
6	7	11	10
12	9	5	8

7

Rule to get  $\bar{V}$  from  $\bar{IV}$   
~~Subexchange~~  
 A interchange middle orthogonal  
 → necessary to get 96 of  $\bar{IV}$

8

9 (95)  $\bar{V}$

1	7	16	10
12	14	5	3
6	4	11	13
15	9	2	8

13

(35)

1	4	16	13
15	14	2	3
10	11	7	6
8	5	9	12

14

without interchange

1	13	12	8
6	10	15	3
16	4	5	9
11	7	2	14

15

1	12	13	8
6	15	10	3
16	5	4	9
11	2	7	14

no interchange  
9, 13 & 5

16

1	7	10	16
12	14	3	5
6	4	13	11
15	9	8	2

18/25  
16 x 25  
400

20

1	16	6	11
13	4	10	7
12	5	15	2
8	9	3	14

21

1	16	6	11
13	4	10	7
12	5	15	2
8	9	3	14

interchange middle orthogonal

22

1	6	16	11
12	15	5	2
13	10	4	7
8	3	9	14

one interchange  
The other  $r \leftrightarrow c$

23 (96)  $\bar{V}$

1	7	16	10
12	14	5	3
13	11	4	6
8	2	9	15

13	11	6	4
8	2	15	9

27 (86)

1	6	16	11
12	15	5	2
7	4	10	13
14	9	3	8

28 (95)  $\bar{V}$  (74)  $\bar{VI}$

1	7	16	10
12	14	5	3
6	4	11	13
15	9	2	8

1	7	10	16
12	14	3	5
15	9	8	2
6	4	11	13

29

Rule from  $\bar{V}$  to  $\bar{VI}$  is the same as from nasell to associated

30

0, 12, 8, 5  
2876 = 39

96 x 2 = 192  
208  
192  
16

(33)

November 1977

THURSDAY      FRIDAY      SATURDAY      MAIN MEETINGS

**3** (VI) not admin-Nash

1	2	15	16	1	2	3	4
12	14	3	5	4	2	3	1
13	7	10	6	1	3	2	4
8	11	6	9	4	3	2	1

**4**

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

~~28~~  
~~22~~  
~~16~~

**5**

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

$1+2+4+12=19$   
 $2+1+1+4=19$   
 $4+3+8$

DATE      TIME      PLACE

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

**10** VII (271)

2	5	18	11	1	4	3	
3	12	1	8	1	4	1	4
4	7	14	9	4	3	2	1
15	10	3	6	3	2	3	2

**11**

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

(n)

**12**

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

1, 2, 3, 4 | 2 1 4 3  
1, 3, 2, 4 | 2 4 1 3  
4, 2, 3, 1 | 3 1 4 2  
4, 3, 2, 1 | 3 4 1 2

6 SU (1, 16) → (1, 4) ✓  
7 (2, 15) → (2, 3) ✓  
8 (3, 14) → (3, 2) ✓  
9 (4, 13) → (4, 1) ✓  
10 (5, 12) → (1, 4) ✓  
11 (6, 11) → (2, 3) ✓  
12 (7, 10) → (3, 2) ✓  
13 SU (8, 9) → (4, 1) ✓  
14 (9, 8) → (1, 4)

**17** VIII (8)

1	3	16	14
8	15	2	9
13	6	11	4
12	10	5	7

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

**18**

1	8	13	12
5	15	6	10
16	2	11	5
14	9	4	7

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

**19**

1, 4, 1, 4  
4, 1, 4, 1  
2, 3, 2, 3  
3, 2, 3, 2  
1, 1, 4, 4  
4, 4, 1, 1  
2, 2, 3, 3  
3, 3, 2, 2

15 (10, 4) → (2, 2)  
16 (6, 7) → (2, 3)  
17 (1, 6) → (3, 2)  
18 (12, 5) → (2, 1)  
19 (13, 4) → (4, 4)  
20 SU (14, 3) → (2, 3)  
21 (15, 2) → (3, 4)  
22 (16, 1) → (2, 1)

**24**

1, 4, 1, 4  
4, 1, 4, 1 (2)  
4 1 4 3  
4 1 4 3

1 2 3 4 | 1 2 4 3  
2 3 2 3 | 2 3 1 4  
3 2 3 2 | 3 2 4 1  
4 3 2 1 | 4 3 1 2

**25**

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

1 3 2 4 | 1 3 4 2  
2 2 3 3 | 2 2 1 3  
3 3 2 2 | 3 3 4 1  
4 2 3 1 | 4 2 1 3

**26** (300) VII

2	7	14	11
8	10	3	13
15	5	16	4
12	1	6	

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

24 4 4 3 2 1  
25 3  
26 (1, 4, 2, 3) (2, 3, 3, 4) ✓  
27 SU (1, 4, 3, 2) (2, 3, 2, 3) (2) ✓  
28 (2, 4, 1, 1) (2, 3, 1, 4) ✓  
29 (3, 2, 4, 1) (2, 3, 4, 1) (2) ✓  
30 WE (3, 2, 2, 3) (4, 1, 2, 3) (2) ✓  
(2) (3, 2, 3, 2) (4, 1, 3, 2) (2) ✓  
(3, 2, 1, 4) (4, 1, 1, 1) (2) ✓  
(2) (3, 2, 4, 1) (4, 1, 1, 1) ✓

1 1 4 4  
2 1 1 3 (6)  
3 2 3 2  
4 3 2 1

1 1 4 4  
2 4 1 3 (1)  
3 3 2 2  
4 2 3 1

1 2 3 4 | 1 2 4 3  
2 3 2 3 | 2 3 1 4 (9)  
3 3 2 2 | 3 3 3 1  
4 2 3 1 | 4 2 2 2

1 1 4 4  
2 4 1 3 (8)  
3 4 1 2  
4 1 4 1

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

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

1 2 3 4 | 1 2 4 3  
2 3 2 3 | 2 3 1 4  
3 2 3 2 | 3 2 4 1  
4 3 2 1 | 4 3 1 2

NEXT MONTH — DECEMBER 1977

SUN	MON	TUE	WED	THU	FRI	SAT		
1	2	4	3	1	2	3	4	
2	3	1	4	2	3	2	3	
3	5	3	6	1	3	5	2	10
4	2	2	13	1	4	3	6	17
18	19	20	21	22	23	24		
25	26	27	28	29	30	31		

December 1977

18, 13, 12  
3, 15, 6, 10, 5  
16, 2, 11, 4  
14, 9, 1

VII

$8 + 16 + 8 + 12$   
 $+ 4 + 8 = 56$

2, 12, 4, 16  
5, 15  
6, 14  
7, 13  
8, 12  
9, 11

SUNDAY

MONDAY

TUESDAY

WEDNESDAY

(8)

1	3	16	14
8	15	2	9
13	6	11	4
12	10	5	7

VII 268, 271, 300, 303,  
346, 347, 369, 371 (2)  
438, 439, 453, 455, 470, 472  
~~455, 455~~, 486, 510, 517,  
518, 525, 529, 531, 538,  
552, 564, (5)

692, 693, 700, 703 (4)  
714, 717, 738, 749  
757, 758, 765, 767  
775, 781, 782, 783  
786, 795, 799, 805  
829, 831, 845, 858 (6)

867, 868, 869, 870  
873, 875, 878, (9)  
879

4

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

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

5 9 10 14  
15  
16  
1, 8, 9, 10  
5

6 3 14, 15  
2, 4, 13, 15  
2, 5, 12, 15  
2, 7, 10, 15  
2, 9, 9, 15  
2, 9, 8, 15  
2, 6, 11, 15  
3, 13, 16, 5, 11, 3

7 (268) VII

2	5	16	11	1
8	12	1	13	2
9	7	12	4	3
15	10	3	16	4

11

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

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

12 6 10 16  
2 5 16  
3 11 7 13  
14 7 9 4 5, 8, 9, 12  
15 10 8 1  
2 8 10 13 6, 8  
3 10 5 16  
14 4  
15 4

13

2	5	16	11	1
8	12	1	13	2
9	7	12	4	3
15	10	3	16	4

14 X

2	5	16	11	1
8	12	1	13	2
9	7	12	4	3
15	10	3	16	4

(1 6 5 1)

18

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

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

19 11 12 5, 7,  
2 9 10 13  
3 8 5 16  
14 1  
15 4  
2 10 9 13  
3 7 8  
14  
15

20  
 $8 + 16 + 8 + 12 + 12 = 56$   
1 1 0  
2 2 6  
15 3 12  
16 4 12  
28 (6) 21

21  
type VII → type X  
by interchange of middle  
orthogonals  
1-2-3-4  
3-6-4-2

25

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

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

26 VII (2, 8, 9, 15)  
(268) (13, 15, 14, 11)  
(271) (2, 16, 11) (2, 13, 4, 15)  
300 (2, 8, 9, 15)  
600 (2, 13, 4, 15)  
(346) (2, 12, 5, 15)  
(471) (2, 13, 4, 15)  
(69) (2, 12, 5, 15)  
(371) (2, 13, 4, 15)

27 10 11 12 20 (6)

1	3	16	14	1
8	15	2	9	2
9	7	12	4	3
16	10	3	16	4

28 VII VII rev c

1	3	16	14	1	9	13	12
8	15	2	9	3	15	6	10
13	6	11	4	16	2	11	5
12	10	5	7	11	9	4	7

9 10 11 12

1, 13, 2, 19  
1, 13, 4, 12  
1, 13, 5, 11  
1, 13, 10, 12  
1, 13, 10, 12

21 2, 11, 5, 16 10, 11  
 6, 15  
 7, 14  
 8, 13  
 9, 12  
 THURSDAY

3, 13 (4)  
 3, 14 (4) 5  
 3, 10 (2)  
 3, 6 (2)  
 3, 7 (2)  
 FRIDAY

26 = 10 + 16  
 = 11 + 15  
 = 12 + 14  
 SATURDAY

19 (34)  
 December 1977  
 MAIN MEETINGS

**1** VII

1	3	16	44
13	6	11	4
8	15	2	9
12	10	5	7

1	16	3	14
13	11	6	4
8	2	15	9
12	5	10	7

VIII → IX by interchange of middle alphabets

**2** (346) (2, 12, 5, 15)  
 (9, 8, 11, 6)  
 (16, 1, 14, 3)  
 (7, 13, 4, 10)  
 (347) (2, 13, 4, 15)  
 (9, 8, 11, 6)  
 (16, 1, 14, 3)  
 (7, 12, 5, 10)

**3**

2	3	15
8	16	13
9	9	10, 4
15	8	5, 6

2	5	16	11
8	12	1	13
9	7	14	4
15	10	3	6

DATE	TIME	PLACE
1 TH	2	3
2	2	4
3	15	13
4 SU	16	14
5		
6		
7		
8		
9		
10		
11 SU		
12		
13		
14		
15		
16		
17		
18 SU		
19		
20		
21		
22		
23		
24		
25 SU		
26		
27		
28		
29		
30		
31 SA		

**8**

8	12	1	13
15	10	3	6
2	5	16	11
9	7	14	4

12	13	8	1
10	6	15	3
5	11	2	16
7	4	9	14

3 - 1 - 4 - 2  
 1 - 2 - 3 - 4  
 on VII → VIII

**9** (369) (2, 12, 5, 15)  
 (11, 6, 9, 8)  
 (14, 3, 16, 1)  
 (7, 13, 4, 10)  
 (371) (2, 13, 4, 15)  
 (11, 6, 9, 8)  
 (14, 3, 16, 1)  
 (7, 7, 2, 5, 10)

**10**

$a + g = 34 - (d + f)$   
 $3a + g = 2 \quad 7$   
 4.  $\bigcirc \quad 2 \quad 15 \quad 10$

$e - h = 3$   
 $f - h = 1$   
 $f - g = 3$   
 $e - g = 5$   
 $b - c = e - h$   
 $v - d = f - h$   
 $a - c = g - f$   
 $a - d = g - e$

**15**

9	7	14	4
2	5	16	11
15	10	3	6
8	12	1	13

14	9	8	7
16	2	12	5
3	15	6	10
1	8	13	12

(28) (3)

**16** (2) (3) (4)  
 (2, 8, 9, 15), (5, 7, 10, 12)  
 (16, 1, 14, 3), (11, 13, 4, 6)  
 (2, 13, 4, 15), (11, 8, 9, 6)  
 (4) (5)  
 (2, 12, 5, 15), (7, 13, 4, 10)  
 (2) (3)

**17**  
 $a + f = c + g$   
 $a + e = d + g$   
 $b + h = c + e = d + f$   
 $a - g = c - f = d - e$   
 $8 + h = 5 + e = 7 + f$   
 $8 - g = 5 - f = 7 - e$   
 $e - f = 2$

$f + g = 34$   
 $34 + b + h - (c + e) = 34$   
 $34 - (a + e) + (d + g) = 34$

**22** VII  
 (268) (2, 8, 9, 15)  
 (5, 12, 7, 10)  
 (16, 1, 14, 3)  
 (11, 13, 4, 6)  
 (371) (2, 13, 4, 15)  
 (2, 13, 4, 15)  
 (5, 12, 7, 10)  
 (16, 1, 14, 3)

**23**

2	5	16	11
9	7	14	4
8	12	1	13
15	10	3	6

$a + g = 34 - (d + f)$   
 $a + g = 34 - (d + f)$

**24**

$a + g = 34 - (d + f)$   
 $34 - (h + i) = 34 - (c + e)$   
 $17 - f + e = 17 - c + d$   
 $17 - c + f = 17 - a + g$

24	1, 2, 15, 16
25 SU	1, 3, 14, 16
26	1, 4, 13, 16
27	1, 5, 12, 16
28	1, 6, 11, 16
29	1, 8, 10, 16
30	1, 8, 9, 16
31 SA	

**29** (11, 5, 9, 6)  
 (200) (2, 8, 9, 15)  
 (7, 10, 5, 12)  
 (14, 3, 16, 1)  
 (11, 13, 4, 6)  
 (200) (2, 13, 4, 15)  
 (7, 10, 5, 12)  
 (14, 3, 16, 1)  
 (11, 8, 9, 6)

**30**

a	c	e	g
b	17 - c	17 - e	h
17 - b	d	f	17 - h
17 - a	17 - d	17 - f	17 - g

$a + 17 - g = 17 - e + d$

**31**

$34 - (c + e) + (d + f) = 34$   
 $d + f = c + e \quad (1)$   
 $b + h = d + f \quad (2)$   
 $b + h = c + e \quad (3)$   
 $e - f = d - c \quad (4)$   
 $a + g = 34 - (d + f)$   
 $c - f = a - g \quad (5)$   
 $a - g = d - e \quad (7)$

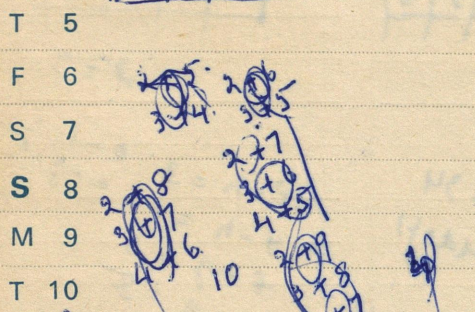
NEXT MONTH — JANUARY 1978

SUN	MON	TUE	WED	THU	FRI	SAT
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

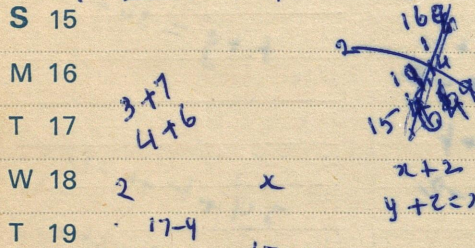
# FORWARD PLANNING 1978

## JANUARY

S 1	1		5
M 2			
T 3	13	14	
W 4	16	2	12



W 11	2		4
T 12			
F 13	12	16	
S 14	15	1	13



S 21	2		x
S 22		2+y	-x
M 23		17-y	17-z
T 24	15	y	z

W 25			
T 26			
F 27	2	19-x	15-y+x
S 28			
S 29	17-u	x+2-z	2+y-x
M 30	u	17-y	17-z
T 31	15	y	z

## FEBRUARY

W 1	2	7	12	13
T 2	11	14	1	8
F 3	5	4	15	10
S 4	16	9	6	3

S 5 2, 7, 12, 13 | 2, 7, 12, 13  
M 6 1, 14, 11, 8 | 1, 8, 11, 14  
T 7 15, 4, 5, 10 | 15, 10, 5, 4  
W 8 16, 9, 6, 3 | 16, 9, 6, 3

F 10	B	D-b+c	A+b-c	C
S 11	C+a	A-a	D-b	B+b+d
S 12	D-a	B+b	C+a	A-b-d
M 13	A	C+a-c	B-a+c	D

T 14				
W 15				
T 16				
F 17				

S 18	A=a	C+a+c	D+b-c	D-b
S 19	D+a-d	B	C	A-a+d
M 20	C-b+d	A	D	B+b-d
T 21	B+b	D-a-c	A-b+c	C+a

T 23 A-a=2  
T 23 B+b=15  
F 24 A+D-a-c=17  
S 25 B+c+a+c=17  
S 26 A+D-b+c=17  
M 27 A+D+b-c=17  
T 28 C+D+a-b=17  
A+B-a-b=17  
W 29 A+2+D-a-c=17  
T 30 D-c=15  
F 31 A+15-a-b=17  
A-a=2

## MARCH

W 1 A=15, B=2  
T 2 C+D=17, A+B=17  
F 3 A+a+D-b+c=17  
S 4 B+b+c+a-c=17  
S 5 D-b+A+b-c=17  
M 6 C+a+B-a+c=17

T 7 ~~A+a+b+c=17~~  
W 8 B+c+a+b-c=17  
T 9 A+D-c=17

F 10 A+D-a-b+c=17  
S 11 B+d+c=17  
S 12 C+a+b-c=2  
M 13 D-c=2

T 14 C+c=15  
W 15 D-a-b+c=2  
T 16 2C+a+b=30  
F 17 2D-a-b=4  
S 18 A(a+b)=13  
S 19 =13-(C-D)

W 22 A=a+2  
T 23 B=15-b  
F 24 D=15+c  
S 25 C=2-a+b-c  
S 26 A=15, B=2  
M 27 D=15+c  
T 28 C=2-a+b-c  
W 29 C=1, D=16  
T 30 B+c=16  
F 31 C=1, D=16, C=1  
C=3, D=14, C=-1  
(11, 6)  
13-1  
13-5  
13-11  
13-10  
13-9  
13-8  
13-7  
13-6  
13-5

$A=15, B=2$   
 $A+D=17$

2	9	16	7
13	8	1	12
4	11	14	5
15	6	3	10

$25, 14, 11$   
 $13+12$

2	8	16	8
			1
		10	14
15	7	3	9

2	8	16	10
			9
			6
15	7	3	9

$22 \rightarrow 7$   
 $16 \rightarrow 6$   
 $15 \rightarrow 7$   
 $14 \rightarrow 8$   
 $13 \rightarrow 9$   
 $12 \rightarrow 10$   
 $13 \rightarrow 9$   
 $14 \rightarrow 8$   
 $15 \rightarrow 7$

7 2 3

(35)

**APRIL**

- S 1  $A+D-a-b+c=17$
- S 2  $B+c+a+b-c=17$
- M 3  $A+D-c=17$
- T 4  $B+a+c=17$
- W 5  $B+c+b+d=17$
- T 6  $B+D-b-d=17$
- F 7  $D-a-b+c=24$
- S 8  $c+a+b-c=15$
- S 9  $D-c=2$
- M 10  $c+c=15$
- T 11  $c+b+d=15$
- W 12  $D-b-d=2$
- T 13  $c-D+2c=13, 2c=13-(c-D)$
- F 14  $c-D+2(b+d)=13$
- S 15  $2(b+d)=13-(c-D)$
- S 16  $c-D+2(a+b-c)=13$
- S 17  $2(a+b-c)=13-(c-D)$
- M 18  $c = b+d = a+b-c$
- T 19  $13-(c-D) = 22, 20, 18, 16$
- W 20  $a+b-c = 14, 12, 11, 10, 9, 8$
- T 21  $b+d = 14, 12, 11, 10, 9, 8$
- F 22  $c = 14, 12, 11, 10, 9, 8$
- S 23  $14, 12, 10, 8, 6, 4, 2, -2$
- M 24  $14, 12, 11, 10, 9, 8, 7, 6, 5, 4, 3, 2, -1$
- T 25  $a+b = 28, 24, 20, 20, 18, 16, 14, 12$
- W 26  $0, 4, 8, 12, a+b=2c$
- T 27  $0, 4, 8, b+d=c$
- F 28  $12, 4, 8, a-d=c$
- S 29  $0, 8, 4, 12$
- S 30  $4, 0, 12, 8$
- S 31  $4, 12, 0, 8$
- M 1  $12, 4, 0, 8$
- T 2  $0, 8, 12, 4$
- W 3  $12, 8, 0, 4$

**MAY**

- M 1  $2+0, 8+4, 4+12, 3+12$
- T 2  $4+4, 4+8, 1+0, 1+12$
- W 3  $1+8, 3+4, 2+12, 4+0$
- T 4  $3+12, 2+8, 3+0, 2+4$
- F 5
- S 6  $2, 5, 16, 11$
- S 7  $8, 12, 1, 13$
- M 8  $9, 7, 14, 4, 39-x$
- T 9  $15, 10, 3, 6$
- W 10
- T 11
- F 12
- S 13
- S 14
- M 15  $(1, 5), (1, 6)$
- T 16  $A=16, B=1$
- W 17
- T 18
- F 19  $16, 2, 3$
- S 20
- S 21
- M 22  $15, 12, 16, 5, 1, 13$
- T 23
- W 24
- T 25
- F 26
- S 27
- S 28
- M 29
- T 30
- W 31

**JUNE**

- T 1  $x=4, y=6, z=3, x=1$
- F 2  $x=5, 4, 6, 9, 5$
- S 3  $x=6, (8, 4), 6, 8$
- S 4  $x=7, (10, 6), 27$
- M 5  $x=10, (12, 8), 7, 9$
- T 6  $17-(x-1), 9, 11, 2, 11, 16, 5$
- W 7  $x=11, 4, 15, 14, 12$
- T 8
- F 9
- S 10
- S 11
- M 12
- T 13
- W 14
- T 15
- F 16
- S 17
- S 18
- M 19
- T 20
- W 21
- T 22
- F 23
- S 24
- S 25
- M 26
- T 27
- W 28
- T 29
- F 30



(36)

from III  
to IV

OCTOBER

S 1	6	13	15	8
M 2	4	11	9	3
T 3	12	3	1	10
W 4	14	5	7	16
T 5				
F 6	16	15	7	8
S 7	14	13	5	6
S 8	10	9	1	2
M 9	12	11	3	4
T 10				
W 11	10	13	7	4
T 12	12	15	5	2
F 13	16	11	1	6
S 14	14	9	3	8
S 15				
M 16	12	16	8	4
T 17	11	15	7	3
W 18	13	9	1	5
T 19	14	10	2	6
F 20				
S 21	14	16	8	6
S 22	13	15	7	5
M 23	11	9	1	3
T 24	12	10	2	4
W 25				
T 26	1	2	16	15
F 27	13	14	4	3
S 28	12	7	9	6
S 29	8	11	5	10
M 30				
T 31				

NOVEMBER

W 1	3	15-x	16	x
T 2		2+x	1	
F 3		19-x	12	
S 4	14	16-2	5	17-x
S 5				
M 6	3	16-x	15	x
T 7		4+x	2	
W 8		18-x	13	
T 9	14	x-1	4	17-x
F 10				
S 11	3	18-x	13	x
S 12		x-1	4	
M 13		16-x	15	
T 14	14	x+1	2	17-x
W 15				
T 16	<del>3</del>	<del>19-x</del>	<del>12</del>	<del>x</del>
F 17		<del>5</del>		
S 18		<del>15-x</del>	<del>16</del>	
S 19	<del>14</del>	<del>x+2</del>	<del>1</del>	<del>17-x</del>
M 20				
T 21	3	19-x	12	x
W 22		x-2	5	
T 23		15-x	16	
F 24	14	x+1	1	17-x
S 25				
S 26	9	15	12	2
M 27	8	14	5	3
T 28	16	6	1	7
W 29	13	11	4	10
T 30				

14, 2, 11, 1  
15, 3, 10, 6  
14, 2, 11, 1  
15, 3, 10, 6

DECEMBER

F 1	1	4	14	15
S 2	13	16	2	3
S 3	8	5	11	10
M 4	12	9	7	6
T 5				
W 6	1	13	8	12
T 7	16	4	9	5
F 8	11	7	14	2
S 9	6	10	3	15
S 10				
M 11	1	4	14	15
T 12	16	13	3	2
W 13	14	20	8	5
T 14	15	7	9	12
F 15				
S 16	1	13	8	12
S 17	11	7	14	2
M 18	16	4	9	5
T 19	6	10	3	15
W 20				
T 21	1	8	13	12
F 22	11	14	7	2
S 23	16	9	4	5
S 24	6	3	10	15
M 25				
T 26				
W 27				
T 28				
F 29				
S 30				
S 31				

14 2 11  
15 3 10 6  
(i)  
wlt  
r ← c  
(192) B&J

(ii)  
without  
r ← c  
(257) B&J

du let  
V from III  
(115) g  
B&J

2

f.p.s (n=13) under  $T = \begin{pmatrix} 1 & 1 \\ 5 & 8 \end{pmatrix}$   
 $\rightarrow$  cyclic squares?

$$S = \frac{L}{2} \cdot 13 \cdot \frac{85}{76} = 1105$$

133	25	73	121	13	61	109	157	49	97	145	37	85
62	110	158	50	98	146	38	86	134	26	74	122	1
147	39	87	135	14	75	123	2	63	111	159	51	99
76	124	3	64	112	160	52	100	148	27	88	136	15
161	40	101	149	28	89	137	16	77	125	4	65	113
90	138	17	78	126	5	53	114	162	41	102	150	29
6	54	115	163	42	103	151	30	91	139	18	66	127
104	152	31	79	140	19	67	128	7	55	116	164	43
20	68	129	8	56	117	165	44	92	153	32	80	141
105	166	45	93	154	33	81	142	21	69	130	9	57
34	82	143	22	70	118	10	58	106	167	46	94	155
119	11	59	107	168	47	95	156	35	83	131	23	71
48	96	144	36	84	132	24	72	120	12	60	108	169

3, 12, 8, 4, 13, 9, 5, 1, 10, 6, 2, 11, 7  
 130, 13, 65, 117, 0, 52, 104, 156, 39, 91, 143, 26, 78  
 (5, 8)  
 10, 6, 2, 11, 7, 3, 12, 8, 4, 13, 9, 5, 1 (5, 8)  
 52, 104, 156, 39, 91, 143, 26, 78, 130, 13, 65, 117, 0 (8, 5)  
 2, 11, 7, 3, 12, 8, 4, 13, 9, 5, 1, 10, 6  
 117, 0, 52, 104, 156, 39, 91, 143, 26, 78, 130, 13, 65  
 9, 5, 1, 10, 6 } (5, 8)  
 39, 91, 143, 26, 78 } (8, 5)  
 $6^k \rightarrow 66$     $9^k \rightarrow 105$     $12^k \rightarrow 144$   
 $7^k \rightarrow 79$     $10^k \rightarrow 118$     $11^k \rightarrow 131$   
 $8^k \rightarrow 92$     $13^k \rightarrow 157$

81	25	151	121	13	61	109	157	49	97	67	37	137
62	110	158	50	98	68	38	138	82	26	152	122	1
89	39	139	83	14	153	123	2	63	111	159	51	99
154	124	3	64	112	160	52	100	70	27	140	84	15
161	40	101	71	28	141	85	16	155	125	4	65	113
142	86	17	156	126	5	53	114	162	41	102	72	29
6	54	115	163	42	103	73	30	143	87	18	144	127
104	74	31	131	88	19	145	128	7	55	116	164	43
20	146	129	8	56	117	165	44	92	75	32	132	89
105	166	45	93	76	33	133	90	21	147	130	9	57
34	134	91	22	148	118	10	58	106	167	46	94	77
119	11	59	107	168	47	95	78	35	135	79	23	149
48	96	66	36	136	80	24	150	120	12	60	108	169

$$T = \begin{pmatrix} a & c \\ v & d \end{pmatrix}$$

$6^k$  119, 11, 59, 107, 168, 47, 95, 78, 35, 135, 79, 23, 149

$3 = a + 2c$   
 $11 = b + 2d$   
 $k = ai + cj$   
 $l = bi + dj$   
 (Handwritten diagrams and notes related to the above equations)

$$k = i + j$$

$$l = 5i + 8j$$

3, 12, 8, 4, 13, 9, 5, 1, 10, 6, 2, 11, 7  
 10, 6, 2, 11, 7, 3, 12, 8, 4, 13, 9, 5, 1  
 4, 13, 9, 5, 1, 10, 6, 2, 11, 7, 3, 12, 8  
 11, 7, 3, 12, 8, 4, 13, 9, 5, 1, 10, 6, 2  
 5, 1, 10, 6, 2, 11, 7, 3, 12, 8, 4, 13, 9

78, 13, 143, 117, 0, 52, 104, 156, 39, 91, 65, 26, 130  
 52, 104, 156, 39, 91, 65, 26, 130, 78, 13, 143, 117, 0  
 65, 26, 130, 78, 13, 143, 117, 0, 52, 104, 156, 39, 91  
 143, 117, 0, 52, 104, 156, 39, 91, 65, 26, 130, 78, 13  
 156, 39, 91, 65, 26, 130, 78, 13, 143, 117, 0, 52, 104  
 130, 78, 13, 143, 117, 0, 52, 104, 156, 39, 91, 65, 26

12, 8, 4, 13, 9, 5, 1, 10, 6, 2, 11, 7, 3

130, 78, 13, 143, 117, 0, 52, 104, 156, 39, 91, 65, 26

disappearance - one gets (5, 8) right through.

Suppose we change the 6th row, etc. according to (9, 4), (8, 5), (11, 2), (5, 8),

(5, 8), (11, 2), (8, 5), (9, 4)

2, 11, 7, 3, 12, 8, 4, 13, 9, 5, 1, 10, 6

117, 0, 52, 104, 156, 39, 91, 65, 26, 130, 78, 13, 143  
 39, 91, 65, 26

8, 4, 13, 9, 5, 1, 10, 6, 2, 11, 7, 3, 12

26, 130, 78, 13, 143, 117, 0, 52, 104, 156, 39, 91, 65

B & J's with

<del>133</del>	<del>25</del>	<del>73</del>	<del>22</del>	<del>13</del>	<del>9</del>	<del>109</del>	<del>157</del>	<del>69</del>	<del>117</del>	<del>88</del>	<del>59</del>	<del>30</del>
1	154	125	96	67	51	22	162	133	117	88	59	30
42	26	166	<del>137</del>	108	79	63	34	5	145	129	100	71
83	54	38	9	<del>129</del>	120	104	75	46	17	157	<del>141</del>	112
124	95	66	50	21	161	132	116	87	58	29	133	153
165	<del>136</del>	107	91	62	33	4	144	128	99	70	41	25
37	8	148	119	103	74	45	16	169	<del>118</del>	111	82	53
78	49	20	160	131	115	86	57	<del>129</del>	12	152	123	94
106	90	61	32	3	156	127	98	69	40	24	164	135
147	118	102	73	44	15	168	<del>131</del>	110	81	65	36	7
19	159	143	114	85	56	27	11	151	122	93	77	48
60	<del>37</del>	2	153	126	97	68	52	23	163	134	105	89
101	72	43	14	167	<del>138</del>	109	80	64	35	6	146	130
142	113	84	55	39	10	150	121	92	76	47	18	158

A = 0    a = 1  
 B = 13    b = 2  
 C = 26    c = 3  
 D = 39    d = 4  
 E = 52    e = 5  
 F = 65    f = 6  
 G = 78    g = 7  
 H = 91    h = 8  
 I = 104    i = 9  
 J = 117    j = 10  
 K = 130    k = 11  
 L = 143    l = 12  
 M = 156    m = 13

(A)

$T = \begin{pmatrix} 59 & 9 \\ 9 & 5 \end{pmatrix} \begin{matrix} 10 = 5i + 9j \\ 9 = 9i + 5j \end{matrix} \begin{matrix} a_{11} \rightarrow 6 \\ a_{21} \rightarrow 6, 10 \end{matrix}$

$143+11$   
 $156+10$   
 $52+11$   
 $156+6$   
 $143+5$   
 $39+10$   
 $39+6$   
 $52+5$

B T's with cols & rows interchange  
 $143+11, 156+10, 39+6, 52+5$   
 $117+10, 117+5, 52+11, 156+6$  5 rows  
 $3 \leftrightarrow 7$   
 $2 \leftrightarrow 8$

$a_{11} \rightarrow b_{11}$   
 $a_{12} \rightarrow b_{3,11}$   
 $a+2c=3$   
 $b+2d=11$

1	42	83	124	165	37	78	106	147	19	60	101	142	
2	54	26	34	95	136	8	49	90	118	159	91	72	113
3	25	166	38	66	107	48	20	61	102	143	2	43	84
4	96	127	9	50	91	119	160	32	73	114	155	14	55
5	67	108	149	21	62	103	131	3	44	85	126	167	39
6	51	79	120	161	33	74	115	156	15	56	97	138	10
7	22	63	104	132	4	65	80	127	168	27	68	109	150
8	162	34	75	116	144	16	57	98	139	11	52	80	121
9	133	5	46	87	128	169	28	69	110	151	23	64	92
10	117	45	17	58	99	140	12	40	81	122	163	35	76
11	88	129	157	29	70	111	152	24	65	93	154	6	47
12	59	100	141	13	41	82	123	164	36	77	105	146	18
13	70	71	112	153	25	53	94	135	7	48	89	130	158

$a_{11} \rightarrow b_{11}$   
 $a_{12} \rightarrow b_{3,11}$   
 $a_{13} \rightarrow b_{5,8}$   
 $a_{14} \rightarrow b_{7,5}$   
 $a_{15} \rightarrow b_{9,2}$   
 $a_{16} \rightarrow b_{11,12}$   
 $a_{17} \rightarrow b_{13,9}$   
 $a_{18} \rightarrow b_{2,6}$   
 $a_{19} \rightarrow b_{4,3}$   
 $a_{1,10} \rightarrow b_{6,13}$   
 $a_{1,11} \rightarrow b_{8,10}$   
 $a_{1,12} \rightarrow b_{10,7}$   
 $a_{1,13} \rightarrow b_{12,4}$

(B)  $1, 3, 5, 7, 9, 11, 13, 2, 4, 6, 8, 10, 12$   
 $11, 13, 2, 4, 6, 8, 10, 12, 1, 3, 5, 7, 9$  (8,5)  
 $161, 4, 65, 77$  307 Taking  $T = \begin{pmatrix} 3 & 11 \\ 11 & 3 \end{pmatrix}$  we can find the p.s. corresponding to (B) as  
 $0, 39, 78, 117, 156, 26, 65, 104, 143, 13, 52, 91, 130$   
 $143, 13, 52, 91, 130, 0, 39, 78, 117, 156, 26, 65, 104$

1	13	12	11	10	9	8	7	6	5	4	3	2
14	26	25	24	23	22	21	20	19	18	17	16	15
27	39	38	37	36	35	34	33	32	31	30	29	28
40	52	51	50	49	48	47	46	45	44	43	42	41
53	65	64	63	62	61	60	59	58	57	56	55	54
66	78	77	76	75	74	73	72	71	70	69	68	67
79	91	90	89	88	87	86	85	84	83	82	81	80
92	104	103	102	101	100	99	98	97	96	95	94	93
105	117	116	115	114	113	112	111	110	109	108	107	106
118	130	129	128	127	126	125	124	123	122	121	120	119
131	143	142	141	140	139	138	137	136	135	134	133	132
144	156	155	154	153	152	151	150	149	148	147	146	145
157	169	168	167	166	165	164	163	162	161	160	159	158

$117+2$   
 $159$   
 $13+1$   
 $117+9$   
 $26+2$   
 $13+10$   
 $26+9$   
 $143+5$   
 $52+6$   
 $117+11$   
 $39+5$   
 $104+30$   
 $104+30$   
 $117, 26, 143$   
 $2, 1, 10, 9$   
 $26, 159$   
 $122, 145$   
 $56, 1154, 88$   
 $101, 24, 40$   
 $307, 161, 4, 65, 77, 307$   
 $101, 24, 40$   
 $60, 88, 46, 110, 102, 46, 110, 88, 134, 283, 378$

p.s. corresponding to (B) under above T.  
 (B')

26, 38, 110, 122  
145, 46, 102, 158

196  
27  
169

96  
109  
13

1	42	83	124	165	37	78	106	147	19	60	101	142	Cyclic in (P) & (R)
154	26	54	95	136	8	49	90	118	159	31	72	113	(8, 5)
125	166	38	66	107	148	20	61	102	143	2	43	84	(8, 5)
96	137	9	50	91	119	160	32	73	114	155	14	55	(8, 5)
67	108	149	21	62	103	131	3	44	85	126	167	39	(8, 5)
59	100	141	13	41	82	123	164	36	77	105	146	18	(4, 9)
88	129	157	29	70	111	152	24	65	93	134	6	47	(5, 8)
162	34	75	116	144	16	57	98	139	11	52	80	121	(2, 11)
133	5	46	87	128	169	28	69	110	151	23	64	92	(8, 5)
117	145	17	58	99	140	12	40	81	122	163	35	76	(8, 5)
22	63	104	132	4	45	86	127	168	27	68	109	150	(2, 11)
51	79	120	161	33	74	115	156	15	56	97	138	10	(5, 8)
30	71	112	153	25	53	94	135	7	48	89	130	158	(4, 9)

186  
26  
100  
227  
140  
156

(C) - (B) with rows 6 & 12, and 7 & 11 interchanged

1	161	12	11	18	9	8	7	109	5	70	3	2
14	26	25	127	23	88	21	20	19	10	17	16	36
93	39	38	37	15	35	34	41	32	31	30	132	28
40	52	59	50	49	48	150	46	111	44	43	42	33
53	168	64	129	62	61	60	51	58	57	77	55	54
66	78	56	76	75	82	73	72	71	4	69	134	67
100	91	90	89	22	87	152	85	84	83	74	81	80
92	157	103	102	101	79	99	98	105	96	95	94	27
97	117	116	123	114	113	112	45	110	6	108	107	106
118	130	63	128	24	126	125	124	115	122	121	141	119
131	143	142	120	140	139	146	137	136	135	68	133	29
144	164	155	154	153	86	151	47	149	148	147	138	145
104	169	65	167	166	165	156	163	162	13	160	159	158

To get A p.s.  
corresponding to (C)  
use steps (-2, -3)  
to go from  $a_{i,1}$  to  $a_{i,13}$   
and step (1, -1) to go  
from  $a_{i,13}$  to  $a_{i+1,1}$ .  
This gives (D)  
which is not  
at all a p.s.  
Rather disappointingly  
again

(D) - not a p.s. at all

175  
27  
148

186  
38  
148

139  
36  
103

136  
37

185  
27  
158

p.s. in the  
general sense

Note: (C) itself

1	8	15	17	24
7	14	16	23	5
13	20	22	4	6
19	21	3	10	12
25	2	9	11	18

Irish method

17	24	1	8	15
23	5	7	14	16
4	6	13	20	22
10	12	19	21	3
11	18	25	2	9

Western method

Regular move (1, 1)  
Break move (0, 2)

10	18	1	14	22
11	24	7	20	3
17	5	13	21	9
23	6	19	2	15
4	12	25	8	16

Start with 1 in the middle of top row.

Table regular moves (1, 2), break move (0, -1)

66 1/2

3.30

$$\begin{array}{r} 3.25 \times 66 \\ \hline 1950 \\ 1950 \\ \hline 21450 \end{array}$$

$$\begin{array}{r} 214.50 \\ \hline 1.15 \\ \hline 215.65 \end{array}$$

$$\begin{array}{r} 225.65 \\ 196.00 \\ \hline 421.65 \end{array}$$

(1, 1) regular step  
(0, -1) break move

5, 16, 15, 20

Islamic method

11	24	7	20	3
4	12	25	8	16
17	5	13	21	9
10	18	1	14	22
23	6	19	1	15

Regular move is (1, -1)  
Break move (0, -2)