

## Diagonally-Bimagic-Chess-Tours

(incomplete)

Walter Trump, 2020-08-05

### Queen's Tour

**21 moves**

Longest Queen's Tour on a bimagic 8x8 square

5	48	61	51	26	24	34	11
47	6	52	62	23	25	12	33
4	50	32	9	59	46	39	21
49	3	10	31	45	60	22	40
27	41	7	18	36	53	64	14
42	28	17	8	54	35	13	63
30	55	38	44	1	15	57	20
56	29	43	37	16	2	19	58

The tour consists of 21 moves.

The tour starts at entry 11 and ends at entry 32.

The solution is unique up to symmetry and complement.

### Knight's Tour

**9 moves**

Longest Knight's Tour on a bimagic 8x8 square

2	46	32	52	39	11	57	21
60	24	38	10	29	49	3	47
45	1	51	31	12	40	22	58
23	59	9	37	50	30	48	4
16	36	18	62	41	5	55	27
54	26	44	8	19	63	13	33
35	15	61	17	6	42	28	56
25	53	7	43	64	20	34	14

The tour consists of 9 moves.

The tour starts at entry 3 and ends at entry 12.

For a closed tour with 10 moves you can move back from 12 to 3.

The solution is not unique.

There are 9 solutions up to symmetry and complement.

### Rook's Tour

**8 moves**

Longest Rook's Tour on a bimagic 8x8 square

4	11	51	18	38	35	60	43
26	15	25	48	21	59	58	8
61	40	19	47	10	14	17	52
44	32	33	54	5	34	3	55
39	56	6	13	62	24	23	37
9	63	46	7	49	36	28	22
27	31	64	20	30	57	29	2
50	12	16	53	45	1	42	41

The tour consists of 8 moves.

The tour starts at entry 28 and ends at entry 36.

For a closed tour with 9 moves you can move back from 36 to 28.

The solution is not unique.

There are 2 essentially different solutions up to complement.

**Bishop's Tour****15 moves**

Longest Bishop's Tour on a bimagic 8x8 square

9	7	39	52	41	62	30	20
6	12	49	38	63	44	17	31
28	22	46	57	36	55	15	1
23	25	60	47	54	33	4	14
50	64	29	10	19	8	37	43
61	51	11	32	5	18	42	40
35	45	24	3	26	13	56	58
48	34	2	21	16	27	59	53

The tour consists of 15 moves.

The tour starts at entry 25 and ends at entry 40.

The solution is not unique.

There are 2 solutions up to symmetry and complement.

**King's Tour****9 moves**

Longest King's Tour on a bimagic 8x8 square

47	49	28	29	6	3	42	56
55	4	41	5	30	50	27	48
54	26	51	8	31	44	1	45
46	43	2	32	7	25	52	53
12	13	40	58	33	63	22	19
20	64	21	34	57	14	39	11
17	38	15	35	60	24	61	10
9	23	62	59	36	37	16	18

The tour consists of 9 moves.

The tour starts at entry 28 and ends at entry 37.

The solution is not unique.

There are 2 essentially different solutions up to complement.