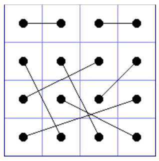
Theorem 4 [connection figure (1122 3456 5768 8347)]



Let M be a general 4x4 magic square of connection figure (1122 3456 5768 8347), then there exist integer numbers k,r such that:

```
    k+21r  k      k+14r  k+ 7r
    k+ 4r  k+10r  k+12r  k+16r
M = k+ 9r  k+15r  k+ 5r  k+13r.
    k+ 8r  k+17r  k+11r  k+ 6r
```

By k+tr -> 1+r, for 0<t, and k -> 1 the square M is mapped onto a general magic square with entries from the symmetric set {1,5,6,7,8,9,10,11,12,13,14,15,16,17,18,22}.

Since for N=22 there are only the 2 possibilities: k=1, r=1 or k=22, r=-1, any general 4x4 general magic square of connection figure (1122 3456 5768 4873), with entry 1, can be derived from either k=1, r=t or k=N, r=-1, where N=1+21t, 0<t.

Proof

By solving the linear equations for M.