4k3/p5pp/2pp4/P7/8/2K5/4PPP1/8 w - - 0 1 blocked kingneed to :

FEN representation of the board is 4k3/p5pp/2pp4/P7/8/2K5/4PPP1/8 w - - 0 1

Moves were: g2g4 e8d7 c3d2 d6d5 d2d3 c6c5 e2e4 d5e4 d3e4 d7d6 e4e3 d6c6 g4g5 h7h5 f2f3 h5h4 f3f4 c5c4 e3e4 h4h3 e4d4 h3h2 f4f5 c6d7 d4c4 d7d6 c4d4 h2h1r d4d3 h1g1 d3e3 g1g5 e3e4 g5g1 e4f3 d6e5 a5a6 e5f5 f3e3 g1a1 e3d4 g7g6 d4d3 g6g5 d3c4 a1a5 c4d4 a5a6 d4c3 a6a5 c3d3 f5f6 d3e4 a5a6 e4d5 a6e6 d5c5 e6a6 c5b4 f6f5 b4c3 f5f4 c3b4 g5g4 b4c5 a6a5 c5d6 a5a6 d6c7 a6e6 c7b8 e6b6 b8c8 b6b5 c8c7 b5b6 c7c8 g4g3 c8d8 b6f6 d8c8 f6a6 c8d7 a6a5 d7c8 g3g2 c8b8 a5e5 b8a8 e5e8 a8a7 e8e1 a7b8 g2g1q b8b7 e1e8 b7c7 e8e1 c7c6 e1e5 c6c7 e5e3 c7d7 e3e1 d7d8 e1e6 d8d7 e6e3 d7c8 f4g4 c8d7 g1c1 d7d6 c1d1 d6c7 d1c1 c7d6 c1d1 d6c6 e3c3 c6b5 d1b3 b5a5 b3a2 a5b4 a2b2 b4a4 c3a3

alg finished in 128 moves.

-100000

Evolutionary algorithm done in 104 seconds.

8/3k3p/8/Pp1pp3/2p5/8/3KPPP1/8 w - - 2 2:

FEN representation of the board is 8/3k3p/8/Pp1ppFEN representation of the board is 8/3k3p/8/Pp1pp3/2p5/8/3KPPP1/8 w - - 2 2

Moves were: a5a6 d7c8 e2e3 b5b4 a6a7 c4c3 d2c2 c8b7 f2f4 d5d4 a7a8q b7a8 f4f5 d4e3 f5f6 a8b7 c2d3 b4b3 f6f7 b3b2 f7f8q b2b1q d3e3 b1b5 f8f5 b5b6 e3e2 b6a6 e2f2 a6a2 f2g1 a2d5 g1h1 h7h6 f5f8 d5d4 f8g8 d4h4 h1g1 h4e1 g1h2 e1h4 h2g1 h4d4 g1f1 d4d3 f1e1 d3e4 e1f1 e4d3 f1e1 d3d2 e1f1 d2d1 f1f2 d1d2 f2g1 d2d4 g1h2 e5e4 g8a2 b7b6 a2a1 b6b5 a1b1 b5c4 b1c2 c4d5 c2c1 e4e3 c1b1 d5c4 b1f1 c4b4 h2h1 d4h4 h1g1 h4f2 f1f2 e3f2 g1f2 c3c2 f2e2 b4c3 e2e3 c2c1q e3f3 c3d3 f3g4 d3e4 g4h3 c1h1 h3g4 h1c1 g4g3 e4d3 g3g4 c1e3 g4f5 e3g5 f5e6 g5g2 e6e5 g2g3 e5d5 h6h5 d5c5 g3f2 c5d6 f2g2 d6d7 h5h4 d7c8 d3e2 c8b8 e2d3 b8a7 g2g7 a7a6 g7g5 a6b7 g5g2 b7c7 d3e2 c7c8 g2g8 c8d7 h4h3 d7d6 g8c8 d6e7 h3h2 e7f7 e2f3 f7e7 f3e4 e7d6 c8d8 d6c5 d8c7 c5b4 c7a7 b4c3 a7g7 c3c4 g7d4 c4b5 d4d7 b5c5 d7c7 c5b4 c7d6 b4b3 d6d5 b3b2 d5d2 b2b3 h2h1q b3c4 h1c1 c4b5 c1g1 b5a4 g1a1 a4b5 d2c1 b5b6 a1g7 b6a6 g7f6 a6b7 f6c6 b7b8 c1b2 b8a7 b2b7

alg finished in 176 moves.

-100000

Evolutionary algorithm done in 114 seconds.3/2p5/8/3KPPP1/8 w - - 2 2

Moves were: e2e3 e5e4 f2f4 e4f3 g2f3 h7h5 a5a6 d7c6 f3f4 h5h4 f4f5 h4h3 f5f6 h3h2 f6f7 h2h1q f7f8q h1h2 d2c3 h2e5 c3c2 e5e4 c2b2 e4e5 b2b1 e5e4 b1a2 e4c2 a2a1 c2a4 a1b2 a4b3 b2a1 b3d1 a1b2 c6b6 f8d6 b6a5 a6a7 d1b3 b2c1 b3c3 c1d1 c3d3 d1c1 d3c3 c1d1 c3d3 d1e1 d3e3 e1f1 e3c1 f1e2 c1c2 e2f1 c2d1 f1g2 d1e2 g2g1 e2e3 g1f1 e3d3 f1f2 d3d4 f2f3 d4e4 f3f2 e4d4 f2f3 d4e4 f3f2 e4d4 f2f1 d4d3 f1e1 d3c3 e1f1 c3f3 f1g1 f3d1 g1f2 d1c2 f2e1 c2c3 e1e2 c3d3 e2e1 d3b1 e1d2 b1b2 d2e3 b2c3 e3f2 c3c2 f2e1 c2c3 e1e2 c3c2 e2e3 c2c1 e3f3 c1d1 f3e3 d1g1 e3d2 g1d4 d2c1 d4e3 c1c2 e3e2 c2c3 e2d3 c3b2 d3d4 b2c2 d4e4 c2b2 e4d4 b2c1 d4e3 c1d1 e3d3 d1e1 d3c3 e1f2 c3d2 f2f3 d2d3 f3f2 d3c2 f2f3 c2d3 f3f2 d3d2 f2f3 d2d1 f3g3 d1g1 g3f3 g1f1 f3g4 f1g1 g4h4 g1d4 h4h3 d4h8 h3g3 h8g7 g3h3 g7e5 a7a8q

alg finished in 151 moves.

100000

Evolutionary algorithm done in 104 seconds.

5k2/7p/p1p5/1p3p2/1P6/P1PK4/5PP1/8 w - - 0 1:

FEN representation of the board is 5k2/7p/p1p5/1p3p2/1P6/P1PK4/5PP1/8 w - - 0 1

Moves were: d3d4 f5f4 f2f3 f8e7 d4e4 c6c5 e4f4 e7d6 f4f5 c5c4 f5f6 h7h6 g2g3 d6d5 g3g4 d5c6 f6f5 c6b6 f3f4 a6a5 f5f6 b6b7 f6e5 b7a7 f4f5 a7b7 e5e6 a5a4 e6f6 b7b8 f6e6 b8a7 e6d7 a7b7 f5f6 b7a7 f6f7 a7b7 f7f8q b7a7 d7c7 h6h5 g4h5 a7a6 f8a8

alg finished in 45 moves.

100000

Evolutionary algorithm done in 39 seconds.

FEN representation of the board is 5k2/7p/p1p5/1p3p2/1P6/P1PK4/5PP1/8 w - - 0 1

Moves were: d3d4 f5f4 d4d3 f4f3 g2g3 f8e7 d3d4 e7f6 d4e3 f6f5 e3f3 f5e5 g3g4 e5f6 f3e2 f6g6 e2e3 g6f6 e3f3 f6g5 f3g3 g5f6 g3f4 f6g6 f4g3 g6f7 g3f3 f7f6 f3f4 f6e6 f4g5 e6d6 f2f3 c6c5 g5h6 d6c6 h6h7 c5b4 c3b4 c6d6 g4g5 d6e5 g5g6 e5d6 g6g7 d6d5 g7g8q d5e5 f3f4 e5f4 h7h6 f4e4 g8g5 a6a5 g5g2 e4f4 b4a5 b5b4 g2d2 f4e5 a5a6 e5f5 a6a7 f5g4 a7a8q b4b3 a8g8 g4f5 g8g6 f5e5 d2d6

alg finished in 71 moves.

100000

Evolutionary algorithm done in 64 seconds.

5k2/7p/1pp5/p4p2/P7/1PPK4/5PP1/8 w - - 0 1:

FEN representation of the board is 5k2/7p/1pp5/p4p2/P7/1PPK4/5PP1/8 w - - 0 1

Moves were: d3d4 f8g7 d4e5 g7g6 f2f4 c6c5 c3c4 g6g7 e5f5 g7f7 g2g4 f7e7 f5g5 b6b5 c4b5 h7h6 g5h6 e7f6 b5b6 c5c4 b6b7 c4b3 b7b8q b3b2 b8b2 f6f7 b2a1 f7e6 h6g6 e6e7 a1e5 e7f8 e5e4 f8g8 e4e8

alg finished in 35 moves.

100000

Evolutionary algorithm done in 35 seconds.

FEN representation of the board is 5k2/7p/1pp5/p4p2/P7/1PPK4/5PP1/8 w - - 0 1

Moves were: d3d4 f8g7 b3b4 f5f4 d4c4 h7h5 c4d4 g7g6 d4e5 f4f3 g2g3 g6g5 e5e4 g5g4 b4a5 b6a5 e4e3 g4h3 e3f3 h3h2 f3f4 h2g2 f4e3 g2h2 e3f4 h2g1 f4e3 g1g2 f2f4 g2h3 f4f5 h3g2 e3e4 g2g3 f5f6 h5h4 f6f7 h4h3 f7f8q g3g2 f8f4 g2h1 f4f2 c6c5 c3c4 h3h2 f2f1

alg finished in 47 moves.

100000

Evolutionary algorithm done in 48 seconds.

5k2/7p/1pp5/p4p2/P2K4/1PP1PP2/8/8 w - - 0 1

FEN representation of the board is 5k2/7p/1pp5/p4p2/P2K4/1PP1PP2/8/8 w - - 0 1

Moves were: d4e5 f8e7 e5f5 e7d7 f3f4 d7e7 f5g5 e7f7 g5h6 f7g8 b3b4 b6b5 a4b5 a5a4 b5c6 g8f7 c6c7 f7f6 c7c8q a4a3 c8d7 a3a2 f4f5 a2a1q d7e6

alg finished in 25 moves.

100000

Evolutionary algorithm done in 28 seconds.

FEN representation of the board is 5k2/7p/1pp5/p4p2/P2K4/1PP1PP2/8/8 w - - 0 1

Moves were: d4e5 b6b5 f3f4 c6c5 a4b5 f8e7 c3c4 h7h5 b5b6 a5a4 b6b7 a4a3 b7b8q e7d7 b8b7 d7d8 b7c6 a3a2 e5d6 h5h4 c6a8

alg finished in 21 moves.

100000

Evolutionary algorithm done in 24 seconds.

**5k2/8/1pp5/p4p1p/P2K4/1PP1PP2/8/8 w - - 0 1: black lead by 3.5**

d4d3 f8e7 d3e2 e7e6 c3c4 e6f6 e2f1 f6g6 f1e1 g6f6 e1e2 f5f4

e3e4 c6c5 e2f2 f6f7 f2e2 f7g6 e2d2 g6g5 d2d1 g5h4 d1e1 h4g e4e5 h5h4 e1f1 b6b5

f1g1 b5c4 b3c4 g3h3 e5e6 h3g3 e6e7 h4h3 e7e8q g3h4 e8f7 h4g5

g1h1 g5h6 f7e7 h6h5 e7g7 h3h2 h1h2 h5h4 g7g4

alg finished in 49 moves.

100000

Evolutionary algorithm done in 35 seconds.

Analysis for this board with stockfish with a depth of 33:

|  |  |  |  |
| --- | --- | --- | --- |
| Our moves | Eval\_loss in accordance to stockfish analysis | (suggested for alg, suggested for engine)  1 for analyze equivalent  0 else | Engine\_move  stockfish with depth 9 |
| d4d3 | -1 | (1,0) | f8e7 |
| d3e2 | -0.6 | (1,0) | e7e6 |
| c3c4 | 0 | (1,1) | e6f6 |
| e2f1 | 0 | (1,1) | f6g6 |
| f1e1 | 0 | (0,1) | g6f6 |
| e1e2 | 0 | (1,1) | f5f4 |
| e3e4 | 0 | (1,1) | c6c5 |
| e2f2 | 0 | (0,1) | f6f7 |
| f2e2 | 0 | (0,1) | f7g6 |
| e2d2 | 0 | (0,1) | g6g5 |
| d2d1 | 0 | (0,1) | g5h4 |
| d1e1 | 0 | (0,1) | h4g3 |
| e4e5 | 0 | (1,1) | h5h4 |
| e1f1 | -0.2 | (0,0) | b6b5 |
| f1g1 | -20 | (0,0) | b5c4 |
| b3c4 | 0 | (1,1) | g3h3 |
| e5e6 | -3 | (0,0) | h3g3 |
| e6e7 | 0 | (1,1) | h4h3 |
| e7e8q | 0 | (1,1) | g3h4 |
| e8f7 | -1 | (0,0) | h4g5 |
| g1h1 | 0 | (0,1) | g5h6 |
| f7e7 | -1 | (0,0) | h6h5 |
| e7g7 | 0 | (1,1) | h3h2 |
| h1h2 | 0 | (1,1) | h5h4 |
| g7g4 | 0 | (1,1) | mate |