

Unique Starting Positions in Fischer Random Chess

1 Introduction

Chess960, also known as Fischer Random Chess, is a chess variant where the starting position of the pieces on the first rank is randomized, subject to certain constraints. This randomization leads to 960 unique possible starting positions. This document will mathematically derive this number using combinatorial principles.

2 Constraints

The arrangement of pieces in Chess960 must adhere to the following rules:

1. The king must be placed somewhere between the two rooks.
2. The bishops must be placed on opposite-colored squares.
3. The white pieces are placed on the first rank, and the black pieces are placed on the eighth rank, mirroring the white pieces' arrangement.

3 Derivation

To calculate the total number of possible starting positions, we will break down the placement of pieces into independent choices and use the multiplication principle of counting.

3.1 Bishop Placement

There are 4 light squares and 4 dark squares on the first rank. We must place one bishop on a light square and one bishop on a dark square.

- Number of ways to choose a light square for the first bishop: 4
- Number of ways to choose a dark square for the second bishop: 4

Therefore, the number of ways to place the bishops is $4 \times 4 = 16$.

3.2 Queen Placement

After placing the bishops, there are 6 remaining empty squares. The queen can be placed on any of these 6 squares.

- Number of ways to place the queen: 6

3.3 Knight Placement

With the bishops and queen placed, there are 5 empty squares left. We need to place two knights. The order in which we place the knights does not matter, so we will use combinations.

- Number of ways to choose 2 squares out of 5 for the knights: $\binom{5}{2} = \frac{5!}{2!(5-2)!} = \frac{5 \times 4}{2 \times 1} = 10$

3.4 Rook and King Placement

After placing the bishops, queen, and knights, there are 3 empty squares remaining. The king must be placed between the two rooks. This leaves only one possible configuration for the rooks and king: Rook, King, Rook.

- Number of ways to place the rooks and king: 1

4 Total Number of Positions

To get the total number of possible starting positions, we multiply the number of possibilities for each step:

$$\text{Total Positions} = \text{Bishop Positions} \times \text{Queen Positions} \times \text{Knight Positions} \times \text{Rook and King Positions}$$

$$\text{Total Positions} = 16 \times 6 \times 10 \times 1 = 960$$

5 Conclusion

Therefore, there are 960 possible starting positions in Chess960 (Fischer Random Chess), as derived mathematically using combinatorial principles.

A Starting Postions Enumerated

We now enumerate these positions using a simple notation. The major pieces are **B** (Bishop), **K** (King), **N** (Knight), **Q** (Queen) and **R** (Rook). The starting positions are shown lexicographically sorted – for example, **BBNNQRKR** precedes **NBBRQKNR**. Each starting postion has a unique number associated with it which denotes the position's lexicographic order within the universe of Fischer Random games. At some point the lexicographic order of the starting postion (or the string representing the position) could be used in **PGN** files to denote that that game is a Fischer Random game. Additionally, this information could be useful in searching game databases for games involving a specific starting position and the lookup could either be based on the lexicographic order number or the string representing the starting position. The normal chess game corresponds to **RNBQKBNR** whose lexicographic number is **829**.

C1		C2	
1. BBNNQRKR		2. BBNNRKQR	
3. BBNNRKQR		4. BBNNRQKR	
5. BBNQNRKR		6. BBNQRKNR	
7. BBNQRKRN		8. BBNQRNKR	
9. BBNRKNQR		10. BBNRKNRQ	
11. BBNRKQNR		12. BBNRKQRN	
13. BBNRKRNQ		14. BBNRKQRN	
15. BBNRNKQR		16. BBNRNKRQ	
17. BBNRNQKR		18. BBNRQKNR	
19. BBNRQKRN		20. BBNRQNKR	
21. BBQNNRKR		22. BBQNRKNR	
23. BBQNRKRN		24. BBQNRNKR	
25. BBQRKNNR		26. BBQRKNRN	
27. BBQRKRNN		28. BBQRNKNR	
29. BBQRNKRN		30. BBQRNNKR	
31. BBRKNNQR		32. BBRKNNRQ	

C1		C2	
33. BBRKNQNR		34. BBRKNQRN	
35. BBRKNRNQ		36. BBRKNRQN	
37. BBRKQNNR		38. BBRKQNRN	
39. BBRKQRNN		40. BBRKRNNQ	
41. BBRKRNQN		42. BBRKRQNN	
43. BBRNKNQR		44. BBRNKNRQ	
45. BBRNKQNR		46. BBRNKQRN	
47. BBRNKRNQ		48. BBRNKRQN	
49. BBRNNKQR		50. BBRNNKRQ	
51. BBRNNQKR		52. BBRNQKNR	
53. BBRNQKRN		54. BBRNQNKR	
55. BBRQKNNR		56. BBRQKNRN	
57. BBRQKRNN		58. BBRQNKNR	
59. BBRQNKRN		60. BBRQNNKR	
61. BNNBQRKR		62. BNNBRKQR	
63. BNNBRKRQ		64. BNNBRQKR	

C1		C2	
65. BNNQRBKR		66. BNNQRKRB	
67. BNNRKBQR		68. BNNRKBRQ	
69. BNNRKQRB		70. BNNRKRGB	
71. BNNRQBKR		72. BNNRQKRB	
73. BNQBNRKR		74. BNQBRKNR	
75. BNQBRKRN		76. BNQBRNKR	
77. BNQNRBKR		78. BNQNRKRB	
79. BNQRKBNR		80. BNQRKBRN	
81. BNQRKNRB		82. BNQRKRNB	
83. BNQRNBKR		84. BNQRNKRB	
85. BNRBKNQR		86. BNRBKNRQ	
87. BNRBKQNR		88. BNRBKQRN	
89. BNRBKRNQ		90. BNRBKQRN	
91. BNRBNKQR		92. BNRBNKRQ	
93. BNRBNQKR		94. BNRBQKNR	
95. BNRBQKRN		96. BNRBQKNR	

C1		C2	
97. BNRKNBQR		98. BNRKNBRQ	
99. BNRKNQRB		100. BNRKNRQB	
101. BNRKQBNR		102. BNRKQBRN	
103. BNRKQNRB		104. BNRKQRNB	
105. BNRKRBNQ		106. BNRKRBNQ	
107. BNRKRNBQ		108. BNRKRQNB	
109. BNRNKBQR		110. BNRNKBRQ	
111. BNRNKQRB		112. BNRNKRQB	
113. BNRNQBKR		114. BNRNQKRB	
115. BNRQKBNR		116. BNRQKBRN	
117. BNRQKNRB		118. BNRQKRNB	
119. BNRQNBKR		120. BNRQNKRB	
121. BQNBNRKR		122. BQNBKRN	
123. BQNBKRN		124. BQNBKRN	
125. BQNNRBKR		126. BQNNRKR	
127. BQNRKBNR		128. BQNRKBRN	

C1	C2
129. BQNRKNRB	130. BQNRKRNb
131. BQNRNBKR	132. BQNRNKRB
133. BQRBKNNR	134. BQRBKNRN
135. BQRBKRNN	136. BQRBKNNR
137. BQRBNKRN	138. BQRBNNKR
139. BQRKNBNR	140. BQRKNBRN
141. BQRKNNRB	142. BQRKNNRB
143. BQRKRBNN	144. BQRKRNNB
145. BQRNKBNR	146. BQRNKBRN
147. BQRNKNRB	148. BQRNKRNb
149. BQRNNBKR	150. BQRNNKRB
151. BRKBNNQR	152. BRKBNNRQ
153. BRKBNQNR	154. BRKBNQRN
155. BRKBNNRQ	156. BRKBNNRQ
157. BRKBQNNR	158. BRKBQNRN
159. BRKBQRNN	160. BRKBRNNQ

C1		C2	
161. BRKBRNQ _N		162. BRKBRQ _{NN}	
163. BRKNNBQ _R		164. BRKNNBRQ	
165. BRKNNQ _{RB}		166. BRKNNRQ _B	
167. BRKNQ _B NR		168. BRKNQ _B NR	
169. BRKNQ _N RB		170. BRKNQ _R NB	
171. BRKNR _B NQ		172. BRKNR _B Q _N	
173. BRKNR _N Q _B		174. BRKNR _Q N _B	
175. BRKQ _N BNR		176. BRKQ _N BNR	
177. BRKQ _N N _R B		178. BRKQ _N N _R B	
179. BRKQ _R B _{NN}		180. BRKQ _R N _N B	
181. BRKR _N B _N Q		182. BRKR _N B _Q N	
183. BRKR _N N _Q B		184. BRKR _N Q _N B	
185. BRKR _Q B _{NN}		186. BRKR _Q N _N B	
187. BRNBK _N Q _R		188. BRNBK _N R _Q	
189. BRNBK _Q N _R		190. BRNBK _Q R _N	
191. BRNBK _R N _Q		192. BRNBK _R Q _N	

C1	C2
193. BRNBNKQR	194. BRNBNKRQ
195. BRNBNQKR	196. BRNBQKNR
197. BRNBQKRN	198. BRNBQNKR
199. BRNKNBQR	200. BRNKNBRQ
201. BRNKNQRB	202. BRNKNRQB
203. BRNKQBNR	204. BRNKQBRN
205. BRNKQNRB	206. BRNKQRNB
207. BRNKRBNQ	208. BRNKRBBQ
209. BRNKRNBQ	210. BRNKRQNB
211. BRNNKBQR	212. BRNNKBRQ
213. BRNNKQRB	214. BRNNKRQB
215. BRNNQBKR	216. BRNNQKRB
217. BRNQKBNR	218. BRNQKBRN
219. BRNQKNRB	220. BRNQKRNB
221. BRNQNBKR	222. BRNQNKRB
223. BRQBKNNR	224. BRQBKNRN

C1		C2	
225. BRQBKRNN		226. BRQBNKNR	
227. BRQBNKRN		228. BRQBNNKR	
229. BRQKNBNR		230. BRQKNBRN	
231. BRQKNNRB		232. BRQKNRNB	
233. BRQKRBNN		234. BRQKRNNB	
235. BRQNKBNR		236. BRQNKBRN	
237. BRQNKNRB		238. BRQNKRNB	
239. BRQNNBKR		240. BRQNNKRB	
241. NBBNQKRK		242. NBBNRKQR	
243. NBBNRKRQ		244. NBBNRQKR	
245. NBBQNRKR		246. NBBQRKNR	
247. NBBQRKRN		248. NBBQRNKR	
249. NBBRKNQR		250. NBBRKNRQ	
251. NBBRKQNR		252. NBBRKQRN	
253. NBBRKRNQ		254. NBBRKRQN	
255. NBBRNKQR		256. NBBRNKRQ	

C1	C2
257. NBBRNQKR	258. NBBRQKNR
259. NBBRQKRN	260. NBBRQNKR
261. NBNQBRKR	262. NBNQRKBR
263. NBNRBKQR	264. NBNRBKBRQ
265. NBNRBQKR	266. NBNRKQBR
267. NBNRKRBQ	268. NBNRQKBR
269. NBQNBRKR	270. NBQNRKBR
271. NBQRBKNR	272. NBQRBKRN
273. NBQRBNKR	274. NBQRKNBR
275. NBQRKRBN	276. NBQRNKBR
277. NBRKBNQR	278. NBRKBNRQ
279. NBRKBQNR	280. NBRKBQRN
281. NBRKBRNQ	282. NBRKBRQN
283. NBRKNQBR	284. NBRKNRBQ
285. NBRKQNBR	286. NBRKQRBN
287. NBRKRNBQ	288. NBRKRQBN

C1	C2
289. NBRNBKQR	290. NBRNBKRQ
291. NBRNBQKR	292. NBRNKQBR
293. NBRNKRBBQ	294. NBRNQKBR
295. NBRQBKNR	296. NBRQBKRN
297. NBRQBNKR	298. NBRQKNBR
299. NBRQKRBN	300. NBRQNKBR
301. NNBBQRKR	302. NNBBRKQR
303. NNBBRKRRQ	304. NNBBRQKR
305. NNBQRBKR	306. NNBQRKRB
307. NNBRKBQR	308. NNBRKBRQ
309. NNBRKQRB	310. NNBRKRQB
311. NNBRQBKR	312. NNBRQKRB
313. NNQBBRKR	314. NNQBRKBR
315. NNQRBBKR	316. NNQRBKRB
317. NNQRKBBR	318. NNQRKRBB
319. NNRBBKQR	320. NNRBBKRQ

C1	C2
321. NNRBBQKR	322. NNRBKQBR
323. NNRBKRBQ	324. NNRBQKBR
325. NNRKBBQR	326. NNRKBBRQ
327. NNRKBQRB	328. NNRKBRQB
329. NNRKQBBR	330. NNRKQRBB
331. NNRKRBBQ	332. NNRKRQBB
333. NNRQBBKR	334. NNRQBKRB
335. NNRQKBBR	336. NNRQKRBB
337. NQBBNRKR	338. NQBBRKNR
339. NQBBRKRN	340. NQBBRNKR
341. NQBNRBKR	342. NQBNRKRB
343. NQBRKBNR	344. NQBRKBRN
345. NQBRKNRB	346. NQBRKRN B
347. NQBRNBKR	348. NQBRNKRB
349. NQNBBRKR	350. NQNBRKBR
351. NQNRBBKR	352. NQNRBKRB

C1	C2
353. NQNRKBBR	354. NQNRKRBB
355. NQRBBKNR	356. NQRBBKRN
357. NQRBBNKR	358. NQRBKNBR
359. NQRBKRBN	360. NQRBNKBR
361. NQRKBBNR	362. NQRKBBRN
363. NQRKBNRB	364. NQRKBRNB
365. NQRKNBBR	366. NQRKNRBB
367. NQRKRBBN	368. NQRKRNBB
369. NQRNBBKR	370. NQRNBKRB
371. NQRNKBBR	372. NQRNKRBB
373. NRBBKNQR	374. NRBBKNRQ
375. NRBBKQNR	376. NRBBKQRN
377. NRBBKRNQ	378. NRBBKRQN
379. NRBBNKQR	380. NRBBNKRQ
381. NRBBNQKR	382. NRBBQKNR
383. NRBBQKRN	384. NRBBQKNR

C1	C2
385. NRBKNBQR	386. NRBKNBRQ
387. NRBKNQRB	388. NRBKNRQB
389. NRBKQBNR	390. NRBKQBRN
391. NRBKQNRB	392. NRBKQRNB
393. NRBKRBNQ	394. NRBKRBNQ
395. NRBKRNBQ	396. NRBKRQNB
397. NRBKNKBQR	398. NRBKNKBRQ
399. NRBKNKQRB	400. NRBKNKRQB
401. NRBNQBKR	402. NRBNQKRB
403. NRBQKBNR	404. NRBQKBRN
405. NRBQKNRB	406. NRBQKRNB
407. NRBQNBKR	408. NRBQNKRB
409. NRKBBNQR	410. NRKBBNRQ
411. NRKBBQNR	412. NRKBBQRN
413. NRKBBRNQ	414. NRKBBRQN
415. NRKBNQBR	416. NRKBNRBQ

C1	C2
417. NRKBQNBR	418. NRKBQRBN
419. NRKBRNBQ	420. NRKBRQBN
421. NRKNBBQR	422. NRKNBBRQ
423. NRKNBQRB	424. NRKNBRQB
425. NRKNQBBR	426. NRKNQRBB
427. NRKNRBBQ	428. NRKNRQBB
429. NRKQBBNR	430. NRKQBBRN
431. NRKQBNRB	432. NRKQBRNB
433. NRKQNBBR	434. NRKQNRBB
435. NRKQRBBN	436. NRKQRNBB
437. NRKRBBNQ	438. NRKRBBQN
439. NRKRBNQB	440. NRKRBNQB
441. NRKRNBBQ	442. NRKRNQBB
443. NRKRQBBN	444. NRKRQNBB
445. NRNBBKQR	446. NRNBBKRQ
447. NRNBBQKR	448. NRNBKQBR

C1	C2
449. NRNBKRBQ	450. NRNBQKBR
451. NRNKBBQR	452. NRNKBBRQ
453. NRNBQRB	454. NRNBQRB
455. NRNKQBBR	456. NRNKQBBR
457. NRNBKBBQ	458. NRNBKBBQ
459. NRNQBBKR	460. NRNQBBKR
461. NRNQBBR	462. NRNQBBR
463. NRQBBKNR	464. NRQBBKNR
465. NRQBBNKR	466. NRQBBNKR
467. NRQBKRBN	468. NRQBKRBN
469. NRQBBNR	470. NRQBBNR
471. NRQBNRB	472. NRQBNRB
473. NRQKNBBR	474. NRQKNBBR
475. NRQKRBBN	476. NRQKRBBN
477. NRQNBBKR	478. NRQNBBKR
479. NRQKNBBR	480. NRQKNBBR

C1	C2
481. QBBNNRKR	482. QBBNRKNR
483. QBBNRKRN	484. QBBNRNKR
485. QBBRKNNR	486. QBBRKNRN
487. QBBRKRN	488. QBBRNKNR
489. QBBRNKRN	490. QBBRNNKR
491. QBNNBRKR	492. QBNNRKBR
493. QBNRBKNR	494. QBNRBKRN
495. QBNRBNKR	496. QBNRK NBR
497. QBNRK RBN	498. QBNRNKBR
499. QBRKBNNR	500. QBRKBNRN
501. QBRKBRNN	502. QBRKNNBR
503. QBRKNRBN	504. QBRKRBNB
505. QBRNBKNR	506. QBRNBKRN
507. QBRNBNKR	508. QBRNKNBR
509. QBRNKRBN	510. QBRNNKBR
511. QNBBNRKR	512. QNBBRKNR

C1	C2
513. QNBBRKRN	514. QNBBRNKR
515. QNBNRBKR	516. QNBNRKRB
517. QNBRKBNR	518. QNBRKBRN
519. QNBRKNRB	520. QNBRKRNb
521. QNBRNBKR	522. QNBRNKRB
523. QNNBBRKR	524. QNNBRKBR
525. QNNRBBKR	526. QNNRBKRB
527. QNNRKBBR	528. QNNRKRBb
529. QNRBBKNR	530. QNRBBKRN
531. QNRBBNKR	532. QNRBKNBR
533. QNRBKRBb	534. QNRBNKBR
535. QNRKBBNR	536. QNRKBBRN
537. QNRKBNRB	538. QNRKBRNB
539. QNRKNBBR	540. QNRKNRBB
541. QNRKRBBN	542. QNRKRNBB
543. QNRNBBKR	544. QNRNBKRB

C1	C2
545. QNRNKBBR	546. QNRNKRBB
547. QRBBKNNR	548. QRBBKNRN
549. QRBBKRNN	550. QRBBNKNR
551. QRBBNKRN	552. QRBBNNKR
553. QRBKNBNR	554. QRBKNBRN
555. QRBKNNRB	556. QRBKNRNB
557. QRBKRBNB	558. QRBKRNNB
559. QRBNKBNR	560. QRBNKBRN
561. QRBNKNRB	562. QRBNKRNB
563. QRBNNBKR	564. QRBNNKRB
565. QRKBBNNR	566. QRKBBNRN
567. QRKBBRNN	568. QRKBNNBR
569. QRKBNRBN	570. QRKBRNBN
571. QRKNBBNR	572. QRKNBBRN
573. QRKNBNRB	574. QRKNBRNB
575. QRKNNBBR	576. QRKNNRBB

C1	C2
577. QRKNRBBN	578. QRKNRNBB
579. QRKRBBNN	580. QRKRBNBB
581. QRKRNBNN	582. QRKRNNBB
583. QRNBBKNR	584. QRNBBKRN
585. QRNBBNKR	586. QRNBKNBR
587. QRNBKRBN	588. QRNBKBR
589. QRNKBBNR	590. QRNKBBRN
591. QRNKBNRB	592. QRNKBRNB
593. QRNKNBRR	594. QRKNRBBB
595. QRNKRBBN	596. QRNKRNNB
597. QRNNBBKR	598. QRNNBKRB
599. QRNNKBBR	600. QRNNKRBB
601. RBBKNNQR	602. RBBKNNRQ
603. RBBKNQNR	604. RBBKNQRN
605. RBBKNRNQ	606. RBBKNRQN
607. RBBKQNNR	608. RBBKQNRN

C1	C2
609. RBBKQRNN	610. RBBKRNNQ
611. RBBKRNQN	612. RBBKRQNN
613. RBBNKNQR	614. RBBNKNRQ
615. RBBNKQNR	616. RBBNKQRN
617. RBBNKRNQ	618. RBBNKRQN
619. RBBNNKQR	620. RBBNNKRQ
621. RBBNNQKR	622. RBBNQKNR
623. RBBNQKRN	624. RBBNQNKR
625. RBBQKNNR	626. RBBQKNRN
627. RBBQKRNN	628. RBBQNKNR
629. RBBQNKRN	630. RBBQNNKR
631. RBKNBNQR	632. RBKNBNRQ
633. RBKNBQNR	634. RBKNBQRN
635. RBKNBRNQ	636. RBKNBRQN
637. RBKNNQBR	638. RBKNNRBQ
639. RBKNQNBR	640. RBKNQRBN

C1	C2
641. RBKNRNBQ	642. RBKNRQBN
643. RBKQBNNR	644. RBKQBNNR
645. RBKQBRNN	646. RBKQNNBR
647. RBKQNRBN	648. RBKQRNBN
649. RBKRBNNQ	650. RBKRBNQN
651. RBKRBQNN	652. RBKRNNBQ
653. RBKRNQBN	654. RBKRQNBN
655. RBNKBNQR	656. RBNKBNRQ
657. RBNKBQNR	658. RBNKBQRN
659. RBNKBRNQ	660. RBNKBRQN
661. RBNKNQBR	662. RBNKNRBQ
663. RBNKQNBR	664. RBNKQRBN
665. RBNKRNBQ	666. RBNKRQBN
667. RBNNBKQR	668. RBNNBKQR
669. RBNNBQKR	670. RBNNKQBR
671. RBNNKRBQ	672. RBNNQKBR

C1	C2
673. RBNQBKNR	674. RBNQBKRN
675. RBNQBNKR	676. RBNQKNBR
677. RBNQKRBN	678. RBNQNKBR
679. RBQKBNNR	680. RBQKBNRN
681. RBQKBRNN	682. RBQKNNBR
683. RBQKNRBN	684. RBQKRNBN
685. RBQNBKNR	686. RBQNBKRN
687. RBQNBKNR	688. RBQNKNBR
689. RBQNKRBN	690. RBQNNKBR
691. RKBBNNQR	692. RKBBNNRQ
693. RKBBNQNR	694. RKBBNQRN
695. RKBBNRNQ	696. RKBBNRQN
697. RKBBQNNR	698. RKBBQNRN
699. RKBBQRNN	700. RKBBRNNQ
701. RKBBRNQN	702. RKBBRQNN
703. RKBNNBQR	704. RKBNNBRQ

C1	C2
705. RKBNNQRB	706. RKBNNRQB
707. RKBNQBNR	708. RKBNQBRN
709. RKBNQNRB	710. RKBNQRNB
711. RKBNRBNQ	712. RKBNRBQN
713. RKBNRNQB	714. RKBNRQNB
715. RKBQNBNR	716. RKBQNBRN
717. RKBQNNRB	718. RKBQNRNB
719. RKBQRBNN	720. RKBQRNNB
721. RKBRNBNQ	722. RKBRNBQN
723. RKBRNNQB	724. RKBRNQNB
725. RKBRQBNN	726. RKBRQNNB
727. RKNBBNQR	728. RKNBBNRQ
729. RKNBBQNR	730. RKNBBQRN
731. RKNBBRNQ	732. RKNBBRQN
733. RKNBNQBR	734. RKNBNRBQ
735. RKNBQNBR	736. RKNBQRBN

C1		C2	
737. RKNBRNBQ		738. RKNBRQBN	
739. RKNNBQR		740. RKNNBQRQ	
741. RKNNBQRB		742. RKNNBQRB	
743. RKNNQBBR		744. RKNNQRB	
745. RKNNRBBQ		746. RKNNRQBB	
747. RKNQBBNR		748. RKNQBBRN	
749. RKNQBNRB		750. RKNQBRNB	
751. RKNQNBBR		752. RKNQNRBB	
753. RKNQRBBN		754. RKNQRNBB	
755. RKNRBBNQ		756. RKNRBBQN	
757. RKNRBNQB		758. RKNRBQNB	
759. RKNRNBBQ		760. RKNRNQBB	
761. RKNRQBBN		762. RKNRQNBB	
763. RKQBBNNR		764. RKQBBNRN	
765. RKQBRRNN		766. RKQBNNBR	
767. RKQBNRBN		768. RKQBRNBN	

C1	C2
769. RKQNBBNR 	770. RKQNBBRN 
771. RKQNBNRB 	772. RKQNBRRB 
773. RKQNNBBR 	774. RKQNNRBB 
775. RKQNRBBN 	776. RKQNRNBB 
777. RKQRBBNN 	778. RKQRBNNB 
779. RKQRNBBN 	780. RKQRNNBB 
781. RKRBBNNQ 	782. RKRBBNQN 
783. RKRBBQNN 	784. RKRBNNBQ 
785. RKRBNQBN 	786. RKRBNQBN 
787. RKRNBNNQ 	788. RKRNBQNN 
789. RKRNBQBN 	790. RKRNBQNB 
791. RKRNNBBQ 	792. RKRNNQBB 
793. RKRNQBBN 	794. RKRNQNB 
795. RKRQBBNN 	796. RKRQBNNB 
797. RKRQNBBN 	798. RKRQNNBB

C1	C2
801. RNBBKQNR	802. RNBBKQRN
803. RNBBKRNQ	804. RNBBKRQN
805. RNBBNKQR	806. RNBBNKRQ
807. RNBBNQKR	808. RNBBQKNR
809. RNBBQKRN	810. RNBBQNKR
811. RNBKNBQR	812. RNBKNBRQ
813. RNBKNQRB	814. RNBKNRQB
815. RNBKQBNR	816. RNBKQBRN
817. RNBKQNRB	818. RNBKQRNB
819. RNBKRBNQ	820. RNBKRBNQ
821. RNBKRNBQ	822. RNBKRQNB
823. RNBKNKBQR	824. RNBKNKBRQ
825. RNBKNKQRB	826. RNBKNKRQB
827. RBNQBKRB	828. RBNQKRB
829. RNBQKBNR	830. RNBQKBRN
831. RNBQKNRB	832. RNBQQRNB

C1	C2
833. RNBQNBKR	834. RNBQNKRB
835. RNKBBNQR	836. RNKBBNRQ
837. RNKBBQNR	838. RNKBBQRN
839. RNKBBRNQ	840. RNKBBRQN
841. RNKBNQBR	842. RNKBNRQB
843. RNKBQNBR	844. RNKBQRBN
845. RNKBRNBQ	846. RNKBRQBN
847. RNKNBBQR	848. RNKNBBRQ
849. RNKNBQRB	850. RNKNBRQB
851. RNKNQBBR	852. RNKNQRBB
853. RNKNRBBQ	854. RNKNRQBB
855. RNKQBBNR	856. RNKQBBRN
857. RNKQBNRB	858. RNKQBRNB
859. RNKQNBBR	860. RNKQNRBB
861. RNKQRBBN	862. RNKQRNBB
863. RNKRBBNQ	864. RNKRBBQN

C1	C2
865. RNKRBNQB	866. RNKRBQNB
867. RNKRNBQ	868. RNKRNBQBB
869. RNKRQBBN	870. RNKRQNBB
871. RNNBBKQR	872. RNNBBKRQ
873. RNNBBQKR	874. RNNBKQBR
875. RNNBKRBQ	876. RNNBQKBR
877. RNNKBBQR	878. RNNKBBRQ
879. RNNKBQRB	880. RNNKBRQB
881. RNNKQBBR	882. RNNKQRBB
883. RNNKRBBQ	884. RNNKRQBB
885. RNNQBBKR	886. RNNQBKRB
887. RNNQKBBR	888. RNNQKRBB
889. RNQBBKNR	890. RNQBBKRN
891. RNQBBNKR	892. RNQBKNBR
893. RNQBKRBN	894. RNQBNKBR
895. RNQKBBNR	896. RNQKBBRN

C1	C2
897. RNQKBNRB	898. RNQKBRNB
899. RNQKNBBR	900. RNQKNRBB
901. RNQKRBBN	902. RNQKRNB
903. RNQNBBKR	904. RNQNBKRB
905. RNQNKBBR	906. RNQNKRBB
907. RQBBKNNR	908. RQBBKNRN
909. RQBBKRNN	910. RQBBNKNR
911. RQBBNKRN	912. RQBBNNKR
913. RQBKNBNR	914. RQBKNBRN
915. RQBKNNRB	916. RQBKNRNB
917. RQBKRBBN	918. RQBKRNNB
919. RQBNKBNR	920. RQBNKBRN
921. RQBNKNRB	922. RQBNKRN
923. RQBNNBKR	924. RQBNNKRB
925. RQKBBNNR	926. RQKBBNRN
927. RQKBBRNN	928. RQKBNNBR

C1	C2
929. RQKBNRBN	930. RQKBRNBN
931. RQKNBBNR	932. RQKNBBRN
933. RQKNBNRB	934. RQKNBRNB
935. RQKNNBBR	936. RQKNNRBB
937. RQKNRBBN	938. RQKNRNBB
939. RQKRBBNN	940. RQKRBNNB
941. RQKRNBNN	942. RQKRNNBB
943. RQNBBKNR	944. RQNBBKRN
945. RQNBBNKR	946. RQNBKNBR
947. RQNBKRBN	948. RQNBKBR
949. RQNKBBNR	950. RQNKBBRN
951. RQNKBNRB	952. RQNKBRNB
953. RQKNBBR	954. RQKNRBB
955. RQNKRBBN	956. RQNKRNBB
957. RQNNBBKR	958. RQNNBKRB
959. RQNNKBBR	960. RQNNKRBB