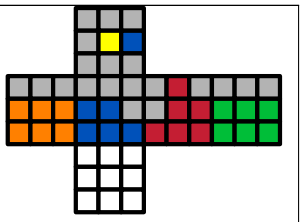
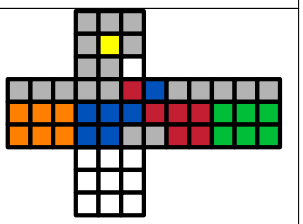
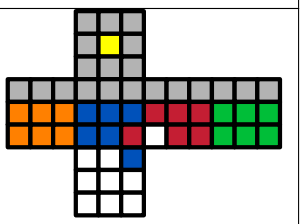
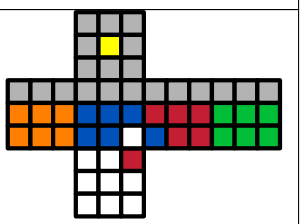
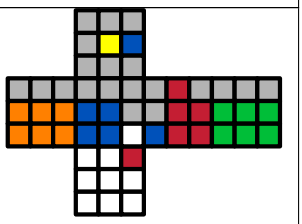
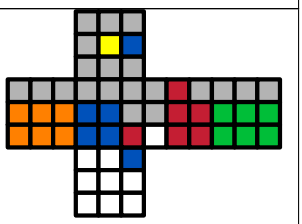
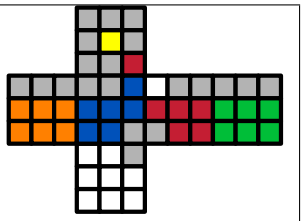
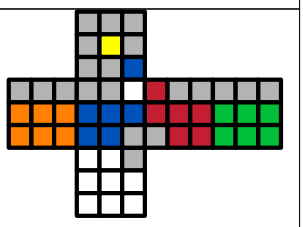
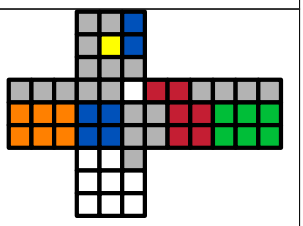
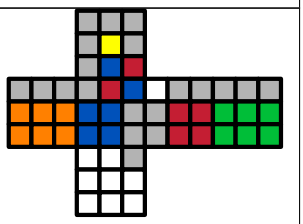
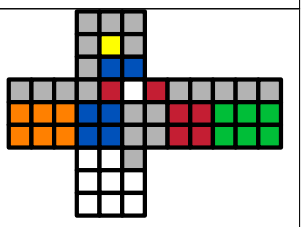
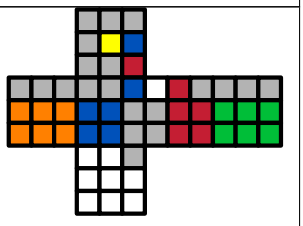
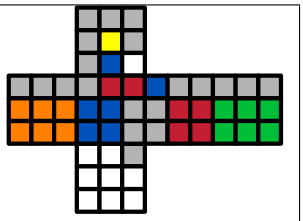
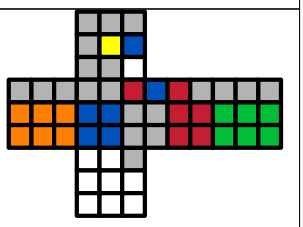
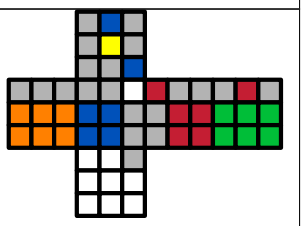
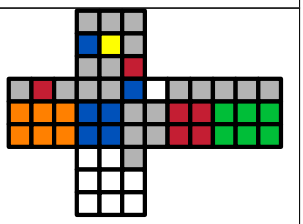
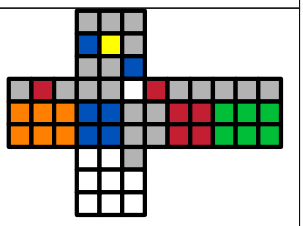
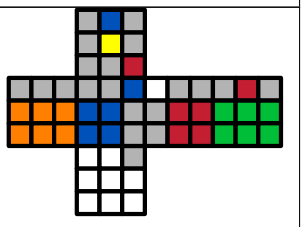
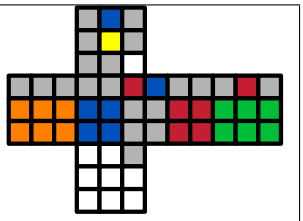
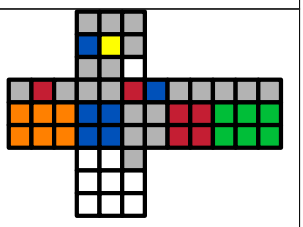
1 F2L

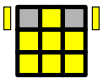
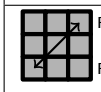
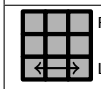
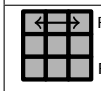
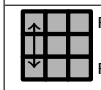
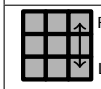
1	R U R' U2 R U R' U2 R U' R'	
2	(U R U' R')3	
3	(R U' R' U) (R U'2 R' U) (R U' R')	
4	(R U R' U') (R U'2 R' U') (R U R')	
5	(R U' R' U) (R U' R')	
6	(R U R' U') (R U R')	

7	U' (R U'2 R' U) (R U R')	
8	U' (R U') (R' U2) (R U' R')	
9	U R U' R'	
10	1. (R U') (R' U) (R U') (R' U2) (R U' R') 2. R U2' R' U2' R U2' R' U2' R U' R'	
11	R U2 R' U R U R' U R U' R'	
12	U' (R U' R' U) (R U R')	

13	(R U R') U2 (R U R' U') (R U R')	
14	(R U2) (R' U' R U) R'	
15	U' (R U R' U') (R U2 R')	
16	U' (R U R' U') (R U2 R')	
17	U' (R U2) (R' U2) (R U' R')	
18	R U R'	

19	U (R U’ U’ R’) U (R U’ R’)	
20	(R U’) (R’ U2) (R U R’)	

2 COLL

		(R U’) U’ R’ U’ (R U’) (R2 U’) U’ R (U R’ U) R
		(R U’) U’ R’ U’ (R U’) (R2 U’) U’ R (U R’ U) R
		F U’ (r’ F) R2 F’ r U R2 F’
		(R’ U) (R U’) U’ r’ (R’ F) (R F’) r
		y’ r (U R’) U’ (r’ F) (R F’)
		y’ (F R F’) r (U R’) U’ r’
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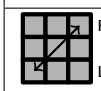
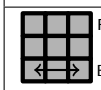
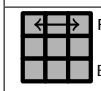
		R’ U2 R F U’ R’ U’ R U F’
		(R’ U) U (R F’) (R’ F) U2 (F’ R) F
		y’ R’ U’ R F (R2 D’) R (U R’ D) (R2 U’) F’

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		y2 R2 D (R' U) U (R D') (R' U) (U R')
		R (U R' U) (R U') (R' U) (R U') (R' U) (R U') U' R'
		(L' U) U (R U') (R' U) U L (R U') R'
		y2 (R U') U' R D (R' U) U (R D') R2
		y' F' r (U R') U' (r' F) R
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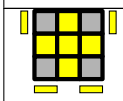		y (R U') U' (R2 U') (R2 U') (R2 U') U' R
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		y2 F (R2 U') R2 U R2 U F' y (R U') U' R'
		y2 (R U') U' R' U' (R U') R2 U (L U') R (U L')
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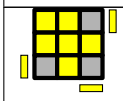		y' R (U R' U) (R U') U' R'

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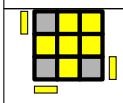
		y' (R U') (r' F) R' (F' r)
		y2 (F R') U2 (R F') (R' F) U2 (F' R)
		y (R' U) U R U F (R' U) (R U') F'
		(R U') U' R' U' (R U') R'
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		y' L R' U' R U L' U2 (R' U) U R
		y' L R' U' R U L' U2 (R' U) U R
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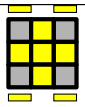		(R U') U' R' U' R (U R') U' (R U') R'
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		y R (U R' U) R U (r' F) R' (F' r)
		y (R' F) U2 (F' R) (F R') U2 (R F')