

Preliminary version

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These collections are preliminary versions intended for review purposes only.

The final version will be freely available to everyone soon.

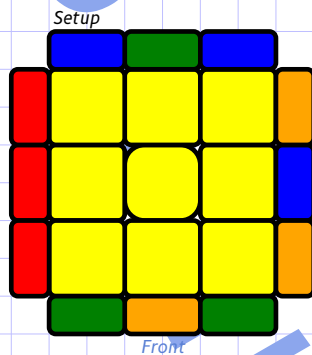
I would like to gather some opinions on the following:

- Is the presentation of the algorithms clear and understandable?
- Is the selection of algorithms appropriate?
- Would it be of interest to generate collections with many more algorithms?
- What could be added to improve this collection of algorithms?

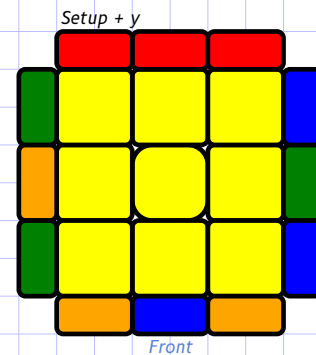
You can write to me at grvigo@hotmail.com

PLL #1 - Ua

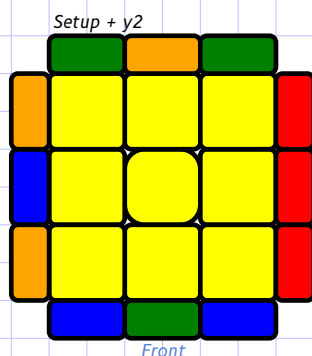
R2 U F B' R2 F' B U R2



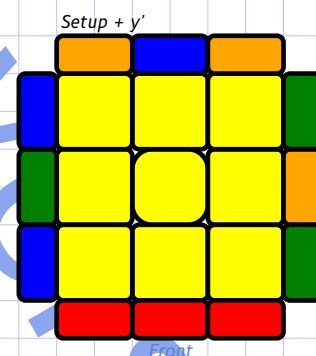
R' U' R2 [U' R' U R] U [R U R' U'] R U R
 [R U R' U'] R' U2 R U R' U' R2 U2 R
 R U' R2 [U R U' R'] U' R' U' [R U R' U] R'
 R2 U' F B' R2 F' B U' R2
 F U F' R' U' R U F U' F' [R' U R]
 F U' F M2 F' U F M2 F2
 F [U R U' R'] F' U R' F' U' F U R
 F2 [R U R' U'] M2 U [R U' R] r2 F2
 F2 U' F' U' F U F U F U' F
 [R' U R U'] R2 U2 R2 U R' U' R' U2 R2
 R2 U2 R' U' R' U R2 U2 R2 U' [R U R']
 F M2 U F' [R' F R] U' M2 F' [R U R']
 F' U' F U' F' U2 F [R U R' U] R U2 R'
 R2 U2 R U2 R' U' R' U' R2 U R U' R2



☆☆☆ [R U' R] U R [U R U' R'] U' R2
 F2 U' M' U2 M U' F2
 R2 S2 [R U R'] S2 [R U' R]
 R U' F U' D [R' U R] U D' F' R'
 F' U2 F [R U R' U] R U2 R' F' U' F
 F R U2 F [R' U R U'] F' U2 R' U' F'
 M2 F U M U2 M' U' F' M2
 F U2 F U F U F2 U' F' U' F2
 F2 U R U2 M' U' r' F2 U' [R' F R]
 F2 U M2 U' F2 U M' F2 M' F2
 R F U R U' R2 F' [R' U R U'] F R2 F' R'
 F' R' u' R U' R' E' [R U R' U] R F
 R' U B' U F' [R U R' U'] B [R' F R] U2 R
 R2 S2 R2 U' [R U' R] S2 R' U R'



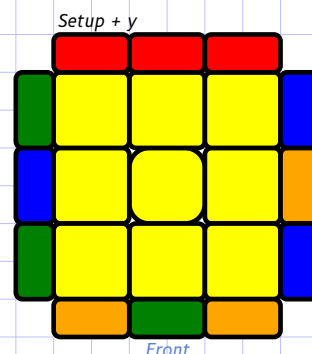
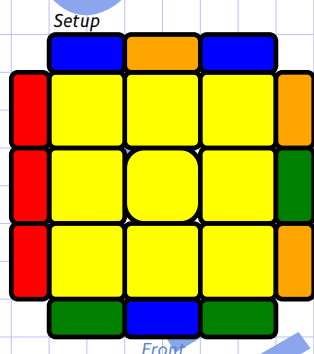
F R2 U' R' S' [R U R'] S R' F'
 R' F2 M2 F' U F M2 F' U' F' R
 M' F2 M' F2 U' F2 U' M2 U F2
 F [R U R' U'] F' R B U' B' R' F' U F
 F' U R' U u' [R U R' U'] D B U2 R
 F2 M2 F [R' U R] F' M2 F R' U' R F
 M' F' r U M2 U' L' U' M' U2
 F U F U' M2 U2 F U' F' U' M2 F'
 F' U' F U2 M2 U' F U M2 F U' F'
 R' U M2 U M' U2 M U M2 U' R
 F U' F R F' R' U R' y [R U R' U'] F L'
 F [R U R' U'] F' B' U' y' L F [R U R'] F'
 B' L' U R' U [R U R'] U2 R L B
 R' U' R U2 R2 U2 R2 U [R U' R] U R U R2



☆☆ [R U R' U] R' U' R2 U' R' U [R' U R]
 R U R2 U' R' [U' R' U R] U R [U R U' R']
 R' B' U D' [R U R' U'] u R U' F
 M2 U' r' F2 M' F2 R U M2
 B' [R' U R] U2 R' F [R U R' U'] F' R B
 F [R U' R] S2 [R' U R] S2 R2 F'
 R' U F' M F R' F' M' F [R U' R]
 [R U R'] B' U' B [U R U' R'] B' U B
 R' U F' U2 R' U' F U F' R U2 F R
 F [R U R' U] F2 r U r F r U' r
 M2 U R2 F2 R2 U' R r F2 R r
 R r F2 R r U R2 F2 R2 U M2
 R' B' U R F' [U R' U' R] F R' B U' R
 [R' F R F'] U' B' R2 U' R U R2 B [R U R']

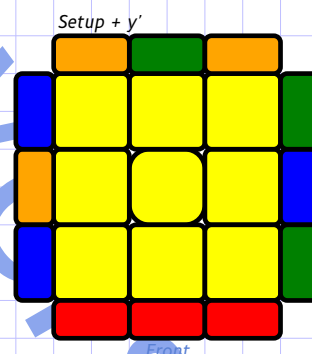
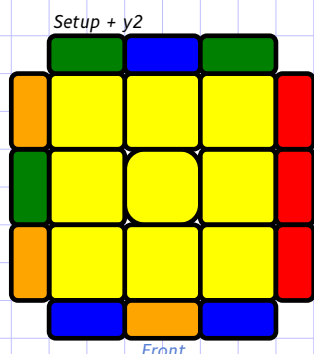
PLL #2 - Ub

R2 U' F B' R2 F' B U' R2



[R U' R] [U' R' U] U [R U' R'] R2 U R'
 B' [U' R' U] F B [R U' R'] F'
 R2 U F B' R2 F' B U R2
 F2 M2 F U' F' M2 F U F
 F' U F' U' F' U' F' U F U F2
 R2 U2 R U R U' R2 U2 R2 [U' R' U' R]
 R U2 R' F' U' F U' F' U2 F [R U' R']
 R2 D' R U2 M' U2 r' D R2
 [R U' R' U] R2 U2 R2 U' R U R U2 R2
 M' F2 r U' R' U' M2 U [R U' R'] F2
 R' U2 F' M' F U2 F' M F R
 F2 R r2 U R U' M2 [U' R' U' R] F2
 R2 U2 R' U2 R U R U2 U' R' U R2
 M' F2 M' F2 U F2 U M2 U' F2

★★★ R2 U [R U' R'] R' U' R' U R'
 R' U2 R' U' R' [U' R' U] U [R U' R]
 R' U' [R U' R] U R2 U [R U' R] U' R'
 R' U' R F U F' [U' R' U] F U' F'
 F2 U' r' F2 M' F2 R U F2
 R U R S2 R' U' R S2 R2
 [R U' R' U] R U2 R' U' R' U' R' U' R' U2 R
 R F U' D R' U' R U D' F' U R'
 R' U' F' U F R L F U F' U' L'
 R2 U S2 R U' R' S2 [R U' R'] R2
 F2 U R' r U2 R L' B U2
 F' R' U' R U' R' E [R U' R'] u R F
 R2 S2 R2 U' R' U' R' S2 [R U' R]
 F' U F2 U' F' U F U y' [R U' R'] [R U' R]

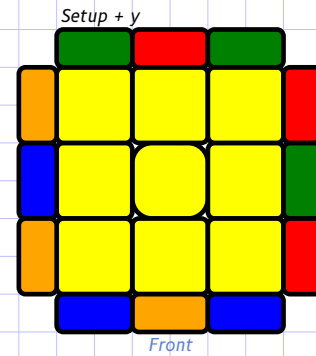
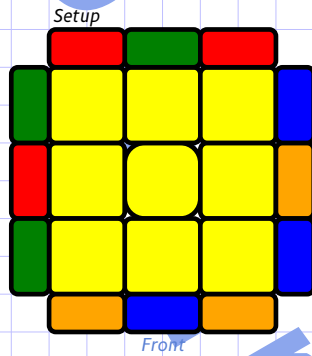


F U' R U2 F [U' R' U' R] F' U2 R' F'
 F R F [R U' R'] F' r' U' F' U M' F'
 R F U F M2 F' U' F M2 F2 R'
 F' U F R U2 R' U' R U' R' F' U2 F
 R F2 U F U F' U' F' U' F' U F' R'
 [R U' R' U] R' U S2 U2 [R' U R] U S2
 F' [R' U R] F' M2 F R' U' R F' M2 F2
 F' U' F U' F U F2 U F U' F' U' F'
 R F R2 F' [U' R' U' R] F R2 U R' U' F' R'
 R' U' R2 U [R U' R' U] R' y U' F' U F' U F
 [R U' R'] U2 R2 U2 R2 U' R' U' R' U' R' U' R2
 [R' F R] S' R' U' R S R' U' F' R
 F2 M2 F2 U' F U F M2 F' U' F'
 M2 U M2 U2 M' F2 M' F2 U M2

M2 U' M' U2 M U' M2
 [R U' R] U [R U' R'] y F' U' F' U2 F'
 R F R2 U R' U' R' [U' R' U] U R' F' R'
 [R U' R' U] R' U' [R' U' R] F B' R2 F' B
 R' U B' U D' R U' R' U' u R F
 [R U' R'] U2 S2 U R' U' S2 [R' U R]
 R' U B' R F' [R' U' R U] F R' U' B R
 R r F2 R r U' R2 F2 R2 U' M2
 M2 U' R2 F2 R2 U R r F2 R r
 R' U R' F' R L' [U' R' U' R] L F U' R
 [R U' R' U] R' U' R' U' R y U F U F2 U' F'
 R' U F' R' r F U' F' R L' U R
 R2 U [R U' R] F' B U2 F B' [R U' R' U] R2
 M' U2 M' U R2 F2 R2 U' r2 F2 R2

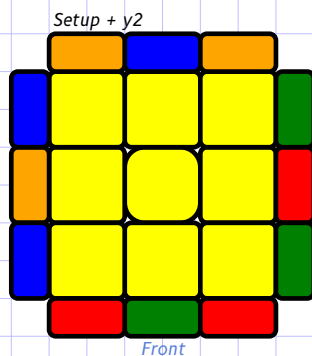
PLL #3 - Z

R' F R F' B' R F B' R F' R' B2

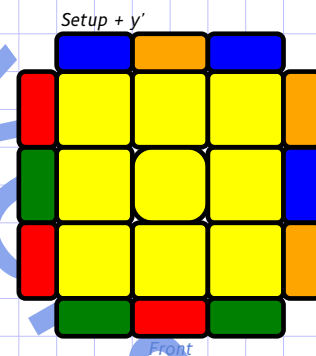


★★★ R' U' R2 U [R U R' U'] R U [R U' R] U' R'
 ★ M' U' M2 U' M2 U' M' U2 M2
 ★ R' U' [R' F R F'] [U R U' R'] U' F' U F R
 [R U R' U] R' U' [R' U R U'] y F' U' F2 U F
 R' U2 F' U F R' U' F R F' [R' U R] U R
 F U F U F' U' F2 [R' F R] U' F' [R U R']
 R2 r U2 M2 U2 r U' M2 U' M2
 M2 U M2 U R2 r U2 M2 U2 r
 F U F R' F' R U' F' U F [U R U' R'] F'
 M2 U' R r U2 M2 U2 R r U M2
 R' U' R' U' R U R2 F R' F' U R F' U' F
 F [R U R'] F' U F U2 F' R y [U R U' R'] F'
 R u [R U R' U'] D' F' R y U [R U R'] U2 F'
 M' E2 M' U2 u' M2 U' M2 u'

★★★ R U R2 U' R' U' [R U R' U'] R' U [R' U R]
 ★ M2 U2 M' U M2 U M2 U M'
 ★ F [R U R' U'] F' U' F U [R' F R F'] U' F'
 ★ R' F' U' F U [R U R' U'] F R' F' R U R
 R U [R U R' U'] R2 B' R y R U' F' [R U R']
 F [R U R' U'] F' L F [R U' R' U] F' L'
 M2 U r2 F2 M2 F2 R2 U' M2
 [R' F R F'] B' R F B' R F' R' B2
 L F U' [R U R'] F' L' F [U R U' R'] F'
 M2 U' M2 U' R F2 M2 F2 R r2
 F R' F' R r U' M' B' R B r2
 R F2 M2 F2 R r2 U M2 U M2
 F [R U' R' U] F' U R' F M' U r' F' R2
 B' U R2 F' U' F U R2 y [R U R'] U2 R



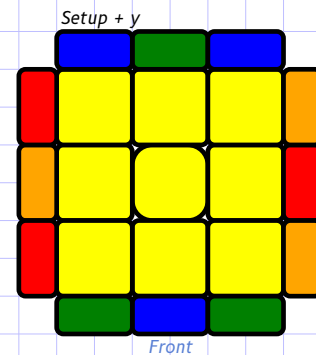
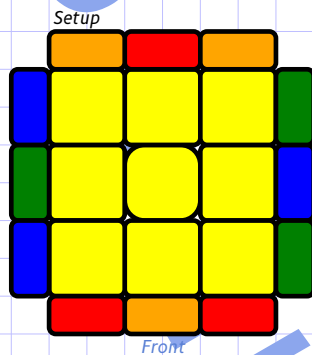
[No specific algorithms for this orientation]



[No specific algorithms for this orientation]

PLL #4 - H

R2 F2 B2 L2 D' L2 F2 B2 R2



☆☆☆ M2 U' M2 U2 M2 U' M2

☆ R2 S2 R2 U' R2 S2 R2

F2 M2 F2 U R F2 M2 F2 R'

R2 U2 R U2 R2 U2 R2 U2 R U2 R2

R' U2 R2 U2 R2 U' R2 U' R' U' R' U2 R

R U2 R' U' R' U' R2 U' R2 U2 R2 U2 R'

R U2 R2 U2 R2 U R2 U R U R U2 R'

R' U2 R U R U R2 U R2 U2 R2 U2 R

M F' U2 F2 U2 F2 U2 F' M'

F2 U' F2 M2 F2 U' M' U2 F2 M'

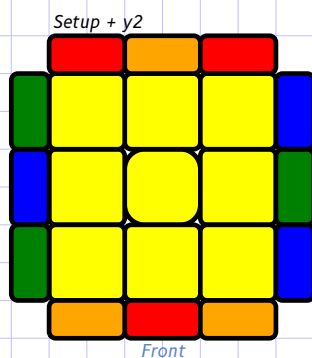
F B' U' R2 U2 R2 U2 R2 U' F' B

R2 U2 M' F2 R2 F2 U2 R' r' F2

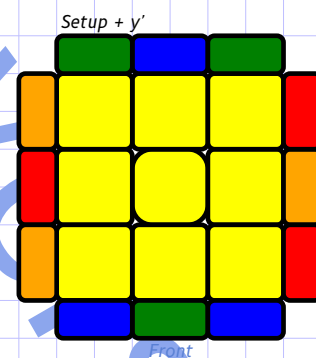
F B U2 F' B' R' r' F2 R r

R' r' F2 R2 F B U2 F' B' M'

[No specific algorithms for this orientation]



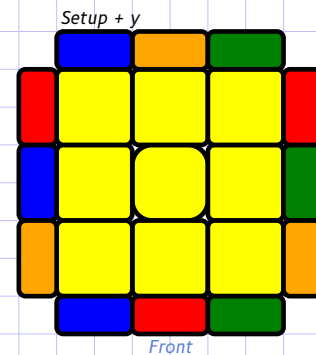
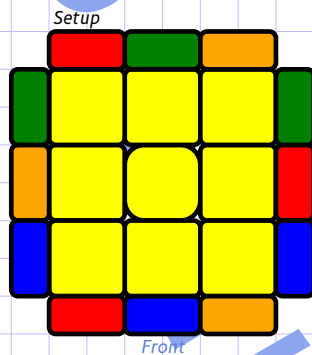
[No specific algorithms for this orientation]



[No specific algorithms for this orientation]

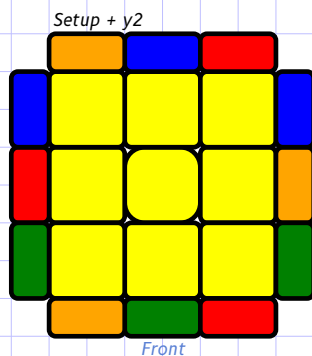
PLL #5 - E

R2 U F2 U2 F2 R2 U F2 U F2 U2 R2 U' R2

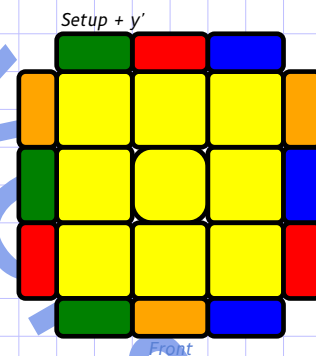


★★ F U' F (R U R' U') F2 U F U2 (R U R') U2 F'
 ★★ F R U2 (R' U R) F U2 F' U' F U' F' R' U F'
 ★★ F R' F' U' R' F' U F R2 U F' (R' U R) F U' R'
 ★ R' U2 F' U F U2 R U R2 U' F' U F (R U' R)
 ★ R U2 R' U2 F' U' F U' R U F (U R U' R') F' R'
 ★ (R U R') U2 F' U' F (R' F R) F2 U F U' R U2 R'
 ★ F2 U2 F2 U' (R U' R' U) R' F2 R U' (R U R' U') F2
 ★ R' F2 u' (R U R') D R U' F R B R' F' R
 ★ R U F' R' U' R F U' R2 F' U' F R U F R F'
 ★ F U' R F U F' U F U2 F' R' U' R U2 R' F'
 ★ R U2 R' U F' U' F2 R' F' R2 y U2 (R U R' U') F'
 ★ R' U' R' D b (R' U R) z (U R U' R') F' D' R
 ★ F R' F' L F R F2 u' (R U R') D R U' F'
 (R U R' U) R' b2 U2 (R U R' U) b2 R2 U2 R'

★★ R' F' U2 F U' F' R' U2 (R U R' U) R F U' R
 ★★ R F (R U R' U') F' U' R' U F' U F U2 R U2 R'
 ★★ (R U R' U) (R' F R) F2 U F U' F R' F' R2 U2 R'
 ★ F (R U R' U') R2 f2 U (R' U R) U2 f2 R2 F'
 ★ R' D F (R U R' U') D' R' D F' D' R U R
 ★ R B' (R' F R) B U' R D (R' U R) D' R2 F'
 ★ F' U' R F U F' R' U F2 (R U R') F' U' R' F' R
 ★ F U2 R U' R' U2 F' U' F2 (U R U' R') F' U F'
 ★ R' U F' R' U' R U' R' U2 R F U F' U2 F R
 ★ F' U2 F U2 (R U R' U) F' U' R' U' F' U F R F
 ★ (R' F R) U F R U' R' F2 U' R F U F' R' U F
 ★ (R' F R) B' R' F' U R' D' R U' R' u F2 R
 ★ R' U R' F' U' F U R2 U' R' U2 F' U' F U2 R
 ★ R U' B (R U R' U) R U2 R' y R' U' R U2 R' F'



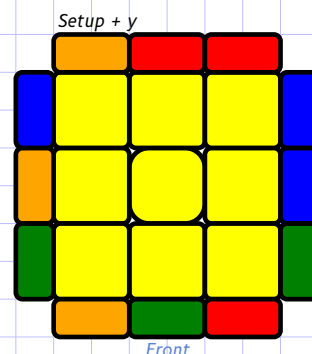
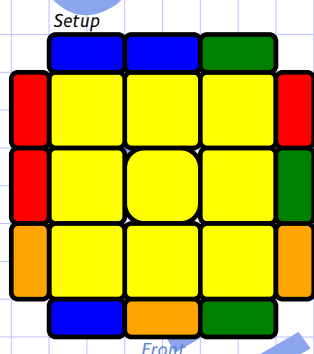
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[No specific algorithms for this orientation]

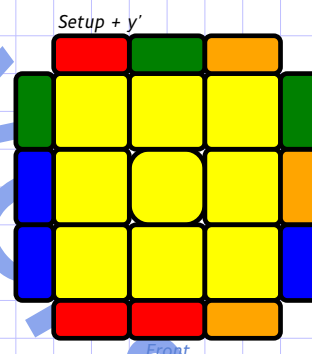
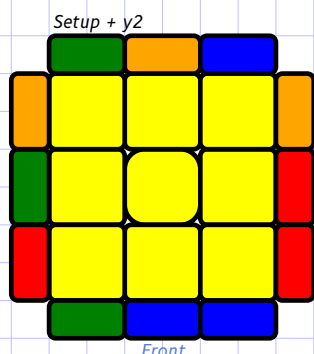
PLL #6 - V

F' R' F' R U' R U R2 F R U F U' F



★★★★★ F' R' F' [R U' R] U R2 F R U F U' F
 ★★★★★ F' U F' U' R' F' R2 U' R' U [R' F R] F
 ★★★★★ [R U' R] U F R F2 U F U' F R' F' R'
 ★★★★★ R F R F' U F' U' F2 R' F' U' R' U R'
 ★★★★★ R [U' R' U R] F R' U' R2 U [R U' R] U R2 F' R'
 ★★★★★ R F U' R2 U [R U' R] U R F' R' U F' U' F
 ★★★★★ F2 U' R2 U R2 F u' R D [R' U R U'] R
 ★★★★★ F' R2 F R U' F' R F2 R2 U [R U' R] F' R
 ★★★★★ R F R2 U' R' U R' U' R2 U R F' R' U' [R U R']
 ★★★★★ F' U F U' R2 U R2 U' R' [U R' U' R] F R F' R'
 ★★★★★ R U' [R U R'] D R D' R F2 U F2 U' R2
 ★★★★★ F' R' U F2 U' F' U F' U' F' R F U' [R U R']
 ★★★★★ [R U R' U'] R' b2 U2 [R' U R U'] R U2 b2 R
 ★★★★★ [R U' R] U F u' R F' R F R2 D R' B'

★★★★★ R U' [R U R'] F2 U [R U R' U'] R' U' F2 R2 U' R2
 ★★★★★ R F' [R U' R] F' [R' U R] F' U' F' U F2 R2 F R'
 ★★★★★ R2 U' R U F' [U' R' U R] F U2 F' U' F U2 R
 R' U F2 U' F [R U R'] F R' F' R2 U' R' F U' R
 R' F' U' R F' R' U F' U' F' U F R F [R' F R]
 F R U [R U R'] F' U2 F [R' F R] F2 U F R' F'
 L2 U' F U' [R U R' U] y' R2 F R U F U' F
 F U' F2 R U F U2 [R U R' U] F' U' R' F' U F'
 F R' F U' F U F2 R2 F R' U' F R F2 R'
 R F R' F' U' R' U' R U R U F' U' F R2 U' R2
 R' U2 F' U F U2 F' R' U' R U F U' R' U R2
 F [R U R'] F' R' L' U L U' R U2 F U2 F'
 R2 F' R F2 U' F U F R' U' R F R' U F R2
 R U2 R2 U2 R' U' F2 R2 U [R U' R] F2 U2 [R' U R]

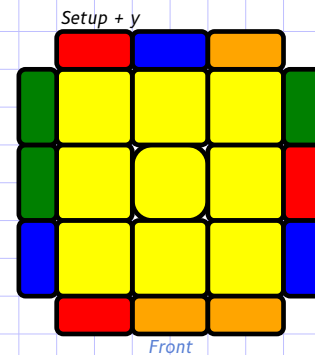
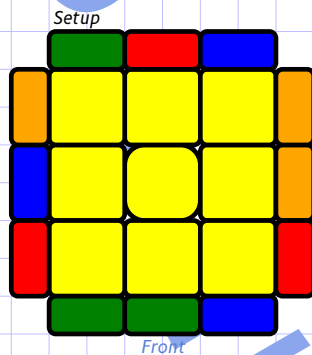


R' b2 U2 R' [U R' U' R] U2 b2 R [U R U' R']
 R2 F' U' F2 U F R F' U' F' [R U R'] F R' F' R2
 F' R2 F2 [R U R'] F' U' F [R' F R] F2 U F' R2 F
 R F2 R2 F' U' F [R U R'] F R' F' R2 U' R F2 R'
 F2 R U R2 U' R' F' R U R F' U' F [R' F R] F2
 R' B' R B U [R U R' U'] R' y U' [R U R'] F2 U F2
 R' U L U' [R U R' U] L' U' R U2 L U2 L'
 R U2 B U' B' U2 B [R U R' U'] B' U R U' R2
 B' U F' U F R2 F R2 y' R' U2 [R' U R U'] L
 R2 U' R F R F' R2 F R F' R2 U' R' U2 R U2 R
 F' U R2 F' R2 U' R2 F R U' F' U2 F U R U F
 F' U' R' U' F' U2 F U R' F' R2 U R2 F R2 U' F
 R' F R' B2 U' R2 U' R2 U R' F' R U B2 R2
 R' [U R' U' R] B2 U' R' U' R U R U B2 R2 U R2

★★★★★ F R F' R F [R U R' U'] R' U F' R' F U' R' F'
 ★★★★★ R' [U R' U' R] D' R' u F' R2 U' R2 U F2
 ★★★★★ R' B' R2 U [R U' R] U R2 U' R' B [R U R' U'] R
 ★★★★★ F R2 U F' U' [R U R' U'] R' U2 F U' R' U' R' F'
 ★★★★★ R' U R' U' B' u R' D' R2 F' [R' F R] F
 ★★★★★ L U' [R U R'] U2 R' F2 R F2 [R U R' U] L'
 ★★★★★ F2 R' F' R U2 R U R2 F R F' [R U R' U] F'
 ★★★★★ R' F R' U R' U' R2 F2 R' F U R' F' R2 F
 ★★★★★ R2 U R2 F' U F U' R' [U' R' U R] U F R F' R'
 ★★★★★ R2 U R2 F2 U R [U R U' R'] U' F2 [R U' R' U] R'
 ★★★★★ R' F' R U R2 U' R F R F' R F R2 U [R U' R]
 ★★★★★ R' B' U R2 U' R' U R' U' R' y R F U' [R U R']
 R' U R' U' R2 F' R' F R' F' R' U R2 U' [R' F R]
 F R U R U F' U2 R [U R U' R'] U F U' R2 F'

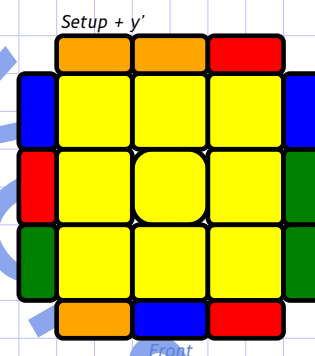
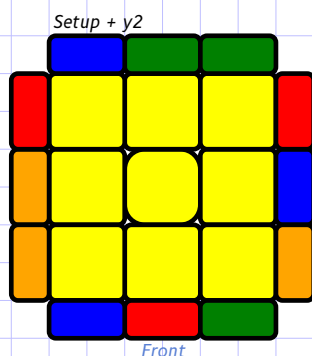
PLL #7 - Y

$R' U' R F2 R' U R U F2 U' F2 U' F2$



★★★ $R2 U' R F' (R' U R) U F U' F' U' F R$
 ★★★ $F R' F R2 U' R' U' (R U R') F' (R U R' U') F'$
 ★★ $F2 U' F' R F U' F' (U' R' U R) U' R' F'$
 ★★ $(R' F R F') U' F' U F U' (R U R' U') (R' F R F')$
 ★★ $R' U' R F2 (R' U R) U y' R2 U' R2 U' R2$
 ★★ $R2 U' R2 U' R2 U F U F' R2 F U' F'$
 ★★ $F2 U F2 U F2 U' R' U' R F2 (R' U R)$
 ★★ $F (U R U' R') F R (U' R' U R) U R2 F' R F'$
 ★ $F R U R U F' U (R' U R) U2 F U' R2 F'$
 ★ $(R' U R) U F' U2 F2 (U' R' U R) U F2 U F$
 ★ $R2 U' (R' U R U') B' R' F R' F' R' B R$
 ★ $R2 U' R2 U' R2 U R' F' R U R2 U' (R' F R)$
 ★ $R' F' R U R2 U' (R' F R) U' R2 U R2 U R2$
 ★ $F R U F (U' R' U R) U F' U R' U (R U R') F'$

★ $F' U' F R U B U (R U R') B' R U' R2$
 ★ $F R U2 R' U' F' U2 F (R' F R F') (R U R') F'$
 $R L F U2 (R' U R) U F' R' F U F' L'$
 $R F2 U' F' (U' R' U R) U' F U F' R F' R'$
 $L2 D F2 (R' F R) F u' F' (R U R') F'$
 $F' U2 F (R U' R) U u (R' F R F') U' D' F2$
 $R' F' R' U' F U F' R U2 F (R' F R F') U2 R$
 $R' F' R' U' R F (R U' R) U F' U F U' R U R2$
 $R2 U' R2 U F2 U' R2 U' R2 U F2 R2 U R2$
 $(R U R' U') R' U F2 R' U R' U' R2 F2 U R' U2 R$
 $F2 R' F' R U' (R' F R) F2 U F U' (R U R' U) F'$
 $(R U' R' U) R' U2 R2 U2 R2 y (R U R' U') F' (R' F R)$
 $R2 U2 R F' R2 F R U2 R2 F' U' (R U R' U) F$
 $F U' (R' F R F') U2 R U F U F' R' F U' F2$

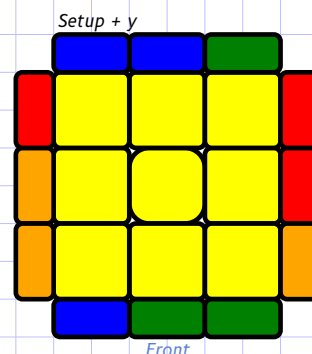
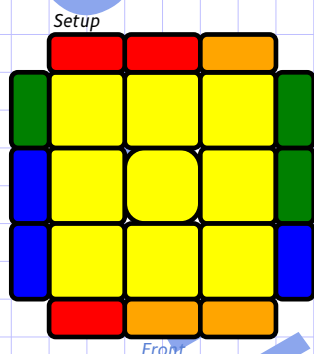


★ $F (R U' R) U' R2 U (R U R') F U R2 U' R2 F2$
 $F U' R' U' F2 U F' R F U' F2 (R U R') F'$
 $B U B' R' U' F' U' R' U' R F R' U R2$
 $R' r' U' F2 R F' R' F' U R U' F' U r$
 $F U' R' U2 R2 D (R' U R) D' R' F' (R' U R)$
 $(R U R') F U F' (R U' R) U2 R F R' U2 R F' R$
 $R' U2 R' F' R2 U' R' F' U' F (R U R') F U2 R$
 $R' U F U F' U' R' U R' F R' U' R' F' R U' R2$
 $R2 U R' F' R2 F (R U R') F' R2 F R' U' R2 U' R2$
 $B U B2 U (R U R' U') B2 U2 B' U (R U R')$
 $F f U R2 F' R F R U' F' U R U' f'$
 $(R' U R U') R U2 R2 U2 R2 F' U' F U R F R' F'$
 $F U2 F R F2 U F (R U R') F' U' F R' U2 F'$
 $F2 U R2 D R2 U' R' D' R F' U2 (R U R') F'$

★★ $R F R' B' R' B R' F' U' (R U R' U') R2$
 ★ $F (R U R' U') (R U R') F R' F' R y' (R' U R) U2 R'$
 ★ $R2 (U R U' R') U F R B' R B R F' R'$
 ★ $B' R' U (R U R' U') B' y U' R F R' U R2$
 ★ $(R U R') B2 R U' R' U' y R2 U R2 U R2$
 ★ $R2 U R' F (R' U R) F' (R U' R) U F U' F' U' R$
 ★ $R2 U R B' R2 B (R' F R F') U F R' F'$
 ★ $B' R B R' U' R' U R2 U R' U' (R' F R F')$
 ★ $(R U R' U) R' U B' U (R U R' U') B U2 R2 U' R'$
 ★ $B' (R' U R) B' D' R F R F' R2 u R2$
 ★ $R2 U (R U R' U') (R' F R) F2 U F U' F R' F' R'$
 ★ $B' (R' U R) F' R' U F U F' U2 R F B$
 ★ $F' R' F (R' U R) F' U F U F' U' R' U' R2 F$
 $R2 U R' B R U' R' U' B' U' R' F' U F$

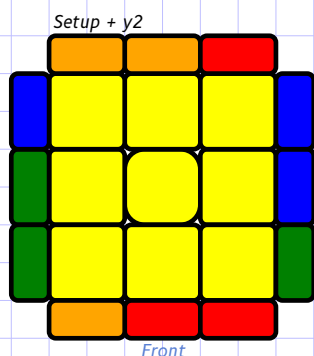
PLL #8 - Na

F' U F2 R2 U F' R2 F U' R2 F2 U' F

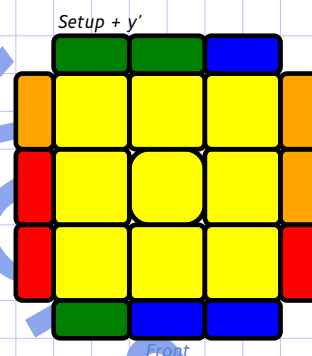


★★★★★ R F [U' R' U R] U F' R2 F' R [U R U' R'] F
 ★★★★★ F' [R U R' U'] R' F R2 F U' R' U' R U F' R'
 ★★★★★ R' F' [R U R' U] F' U' [R' F R] U F U2 F R
 ★★★★★ R U2 R2 U' R2 F' [R U R' U'] R' F [R' U R] U2 R'
 ★★ [R U R' U'] R' U' R U F' U' F U' R' U2 F R F'
 ★★ F R' F' U2 R U F' U F [U' R' U R] [U R U' R']
 ★★ F U' F' U F [R U R'] F' U' F [R' F R F'] U F'
 ★★ R F U2 F' U [R' U R] U2 F U' [R' U R U'] F' R'
 ★ F' U F2 R2 U F' R2 F U' R2 F2 U' F
 ★ R F [U' R' U R] U R' F U F' R F U' F2 R'
 ★ R' F' U2 F' U' R' F' R U F U' R U' [R' F R]
 ★ F M2 U' F' U r2 U' F U' F' U2 R2 F'
 ★ F R2 U2 F U F' U r2 U' F U M2 F'
 ★ R U F' R F' [R U R' U'] R' F2 U F' R' F U2 R'

[No specific algorithms for this orientation]



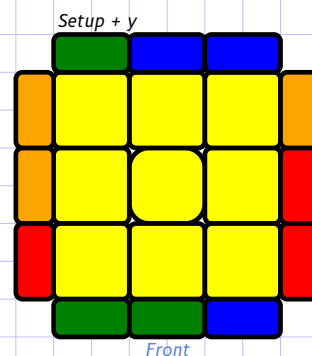
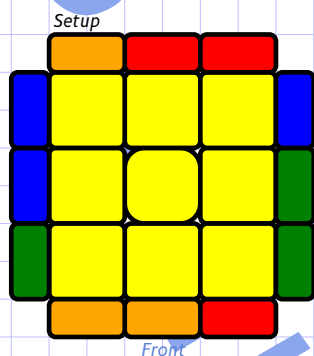
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[No specific algorithms for this orientation]

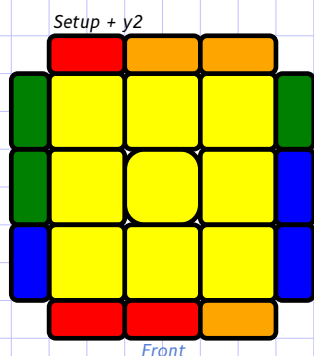
PLL #9 - Nb

$R\ U'\ R^2\ F^2\ U'\ R\ F^2\ R'\ U\ F^2\ R^2\ U\ R'$

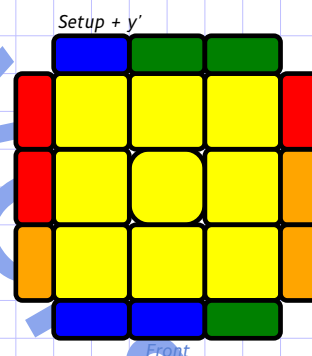


☆☆☆ $R'\ U\ [R'\ F\ R\ F']\ R\ U'\ R'\ F'\ U\ F\ [R\ U\ R'\ U']\ R$
 ☆ $[R'\ U\ R\ U']\ R'\ F'\ U'\ F\ [R\ U\ R']\ F\ R'\ F'\ [R\ U'\ R]$
 $R'\ U'\ R\ U\ [R\ U\ R'\ U']\ y\ [R\ U\ R'\ U']\ F\ U^2\ R'\ F'\ R$
 $R\ U'\ R^2\ F^2\ U'\ R\ F^2\ R'\ U\ F^2\ R^2\ U\ R'$
 $F'\ [R\ U'\ R]\ F\ [R'\ U\ R]\ F'\ R\ U\ F\ U\ F'\ U'\ R\ F$
 $F'\ R^2\ U'\ R\ F\ [R'\ U\ R]\ y'\ R'\ U\ [R\ U\ R'\ U']\ B\ R$
 $[R'\ F\ R]\ U^2\ F'\ U'\ R\ U'\ R'\ y'\ [U\ R\ U'\ R']\ [U'\ R'\ U\ R]$
 $R'\ U'\ R\ U^2\ R\ F\ [R'\ U\ R]\ F'\ R^2\ U\ F\ U^2\ F'\ R$
 $R'\ F\ U^2\ F'\ U'\ R^2\ F\ R'\ U'\ R\ F'\ R'\ U^2\ [R'\ U\ R]$
 $F'\ R'\ U\ F\ U'\ F'\ U'\ R\ F\ R'\ U'\ R\ F'\ [R'\ U\ R]\ F$
 $R'\ U^2\ R\ F\ R^2\ U\ R'\ F'\ R\ F\ [R\ U'\ R]\ F'\ U^2\ R$
 $R'\ U^2\ R'\ U\ R'\ F'\ R\ F\ [R\ U'\ R]\ U\ F'\ U\ R\ U'\ F$
 $F'\ U\ R'\ U'\ F\ U'\ R'\ U\ R'\ F'\ R'\ F\ [R\ U'\ R]\ U^2\ R$
 $F\ [R'\ U\ R]\ F'\ R^2\ U\ F\ U\ F'\ U'\ R\ F\ U^2\ F'\ U'\ R$

[No specific algorithms for this orientation]



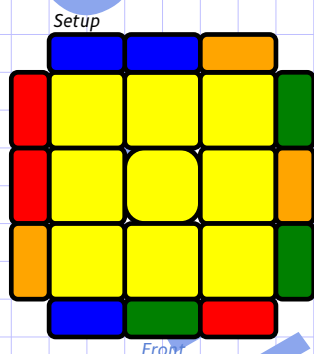
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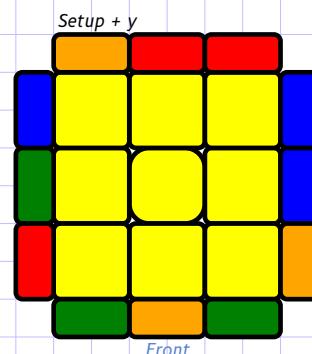
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PLL #10 - Aa

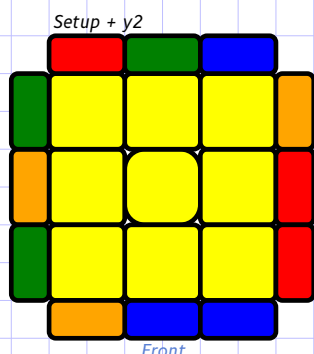
R B' R F2 R' B R F2 R2



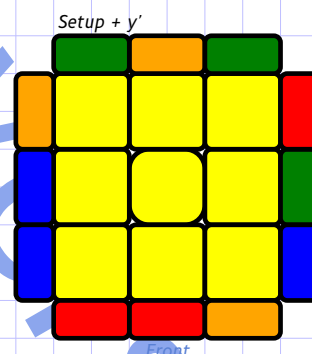
★★ R2 F2 R' B' R F2 R' B R'
 ★★ F' r U' R2 U L' U' R2 U2
 ★★ R F B R' F' R B' (R' F R F') R'
 ★ F' U' (R U R' U) F' U' (R U' R' U) (R' F R) F
 ★ F' (R' F R F') L' F R' F' R L F
 ★ R' F (R' U R U') R F R U R U' F R F' R'
 ★ R F B U' (R U R') B' (R U' R' U) F' R'
 R2 U F2 U' F2 R2 u' R2 D R2
 R B2 U' F' U B' U' F U B' R'
 R U2 R' F (R' U R U') F' U R' U' R2 U2 R'
 (R U R') U2 R' D' R U' R' D (R U' R) U' R'
 R F' R2 F R U' R' F' R' U R2 U' (R' F R)
 F' R' U F' u' R U' R' D R B R
 R F R' U F' R F R' U' R F' (R' F R F') R'



★★ R' U' R U' R' F' (R U R' U') (R' F R) U2 R
 ★ F2 L2 F' R' F L2 F' R F'
 ★ F R2 U' L' U R' U' L U R' F'
 ★ R2 B2 R2 U' R' U R' B2 (R U' R)
 ★ R' U' R U' F U F' R' F U' F' U2 R
 ★ R' U2 B' u R U' R' D' R U' F
 R2 B' (R' F R) B2 R' F' R B' R2
 F R U F U' B' U F' U' B R' F'
 F R2 U' R' F R' F' U' R U F' (R U R' U') R'
 F2 U R2 U' L2 U R2 U' L2 F2
 R' U' R F' R' U D R U' R' D' R F
 R' F' R U (R' F R F') R' F' R2 U' R2 F R F
 R' U2 R' U' B (U R U' R') U' B' U (R U' R)
 F2 (R U R' U') R' D (R U R') D' R2 U' R' F2



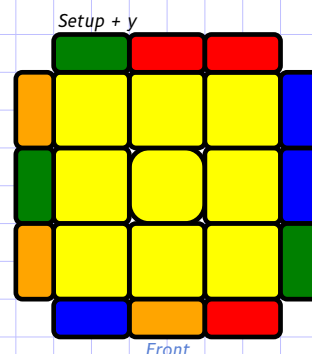
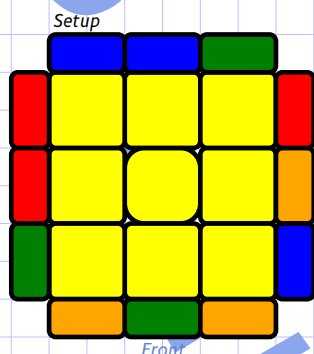
★ R2 F' (R U R' U') R' F2 R (U R U' R') F' R2
 ★ (R U R' U) F (U R' U' R) F' (R' U R) U2 R U' R'
 ★ F2 R2 F2 U' F' U F' R2 F U' F
 ★ L F2 (R' U R U') F' (U R' U' R) F' L'
 ★ R U' F u' R' U' R D R' U2 B'
 F2 R2 F2 R U' R' F2 R2 F2 (R U R')
 (R U' R) U F' U' R' U' R U F U' R' U2 R'
 R' F U' R' U2 R U F' (R' U R U') (R U R' U) R
 (R U' R) F (U R' U' R) F2 (R' U R U') F R' U R'
 R' U' R' F R2 F2 (R' U R U') F2 R' F' R
 R2 U R' U' (R' F R) U R2 U' R' F' (R U R' U') R2
 R U' F R F' (R' U R U') F U R' U' F' U R'
 R' F U (R' F R) (U R U' R') F' (R U R') U2 F' R
 (R U R') F' L F R' F' L' F R2 U' R'



★★ [R U' R] F2 R' U R' U' R2 F2 R2
 ★★ F U2 R' U' R F' (R' U R U') F U' F
 ★ (R U R' U) F' U F U F' U2 F U (R U R')
 ★ R' F' U B U' F' U B' U' F2 R
 ★ R' F' U' F (R' U R U') F' (U R' U' R) U F R
 ★ R' F' L U' R' U L' U' R U F R
 F' U F U R U2 R' U (R U R' U) F' U F
 R' B' U R' D' R U' R' u F R F
 R' U' (R U' R) D R' U' R D' R' U2 (R' U R)
 F' R U R2 U' R' F U' R2 U R U' (R U R' U) R
 R U2 (R' U R U') R' F (R U R' U') R' F' R2 U2 R'
 R' U' R' F (R U R' U') B R' F' R B' U R2
 F U R2 D R' U' R D' R' U R' U' F'
 B' U (R' U R U') R' U' R y (R U R' U') F R' F' R2

PLL #11 - Ab

R2 F2 R' B' R F2 R' B R'



☆☆☆ F' R' D [R U R' U'] D' R F [R' U R]

☆☆ R B' R F2 R' B R F2 R2

☆☆ R F U' R D [R' U R] D' R' F' R'

☆ R F R' F' R B [R' F R F'] B' R'

☆ F2 R2 F r U' R2 U L' U

☆ R F' R2 D [R U R'] D' [R U' R] F R'

☆ R' U R' B2 [R U' R] U R2 B2 R2

F' R' F' u' [R U R'] D R U' B R

F' R' F' R U' [R U R' U] F U' [R U' R' U] F

F' R' L' F R F' r [U R' U' R] U

[R U R' U] R' D' [R U R'] D R U2 R U' R'

B' U2 R u F' U F D' F' U R

F' L2 U R U' L U R' U' L F

F' R2 L' U' R U L U' R' U R2 F

☆☆ R' U2 F U F' R F U' F' U [R' U R]

☆☆ R' U2 R' F' R [U R U' R'] F [R U R' U] R

☆☆ R' U B' u [R U R'] D' R U2 F

☆ R' U' F' L' F R F' L F [R' U R]

☆ F R' F L2 F' R F L2 F2

☆ F R U' L' U R U' L U R2 F'

☆ F [R U R' U] R U' F [U R' U' R] F' U' R' F'

☆ F' U F' R2 F U' F U F2 R2 F2

[R' F R] F2 [U R' U' R] F2 R2 F' R U R

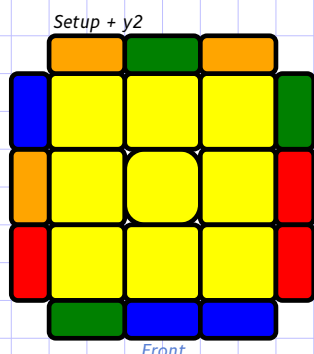
F R B' U F U' B U F' U' R' F'

F [R U' R] U' F' U [R' U R] U2 F U2 R2 F'

[R' F R] F2 U' L' U' L U2 F [R U R']

F' U' [R U R'] D R U2 R' D' [R U R' U] F

R2 B [R' F R] B2 R' F' R B R2



☆☆☆ R2 F2 R2 U [R U' R] F2 R' U R'

☆ R U2 F u' [R' U R] D R' U B'

☆ [R U R'] B R U' D' [R' U R] u F' R'

☆ R2 F [R U R' U'] R' F2 R [U R U' R'] F R2

☆ L F [R' U R U'] F [U R' U' R] F2 L'

F' R2 F' R' F [R' U R] F' R F R2 U' F

R U2 R U F' [U' R' U R] U F U' R' U R'

R U' R' F2 R2 F2 [R U R'] F2 R2 F2

[R U' R] F' [U R' U' R] F2 [R' U R U'] F' R' U R'

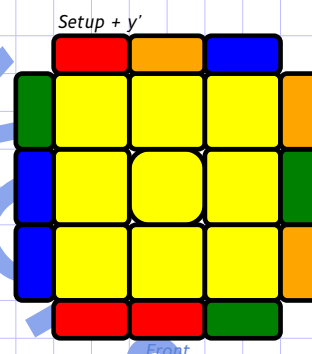
F' U R' F' R F [R U R'] F' [R' F R] U2 F

[R U R' U] B' U [R U R'] y U' R U F U2 F'

[R U R'] U2 R' U' R F [R' U R U'] F' U' R U' R'

R U2 R' F' [R' U R U'] F U R' U' R2 U2 R'

R U2 F U [R' U R] F' R' F U2 F' U [R U R']



☆☆☆ F U F' [U R' U' R] F [R' U R] U2 F'

☆ F2 [R U R' U'] L2 [U R U' R'] L2 F2

☆ R' B' R' D' [R U R'] u F U' R F

☆ R' F2 U B U' F U B' U' F R

R2 D' R2 u R2 F2 U F2 U' R2

R' F' U' R' U L U' R U L' F R

R' U R' U2 R D [R' U R] D' [R' U R U'] R

R' B [R U' R] D' [R' U R] D R2 B' R

R' F' R U R2 U' R F [R U R'] F' R2 F R'

F U r' D' [R U R'] D R U' M' U' F'

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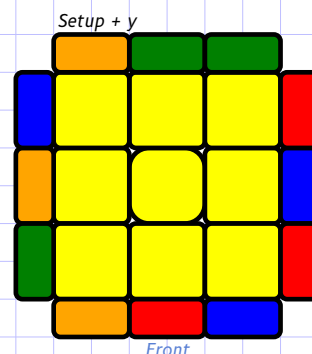
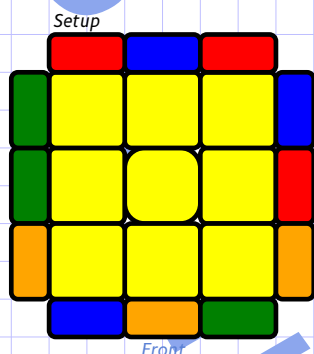
R' r' B2 R F R' B2 R F' r

R U2 R2 U2 R' U' F [R U R' U'] R' F' U2 [R' U R]

F U' R F [R U R' U'] R' F' R U R U' R2 U F'

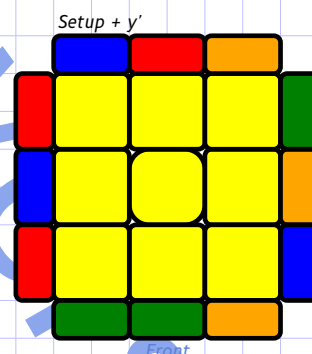
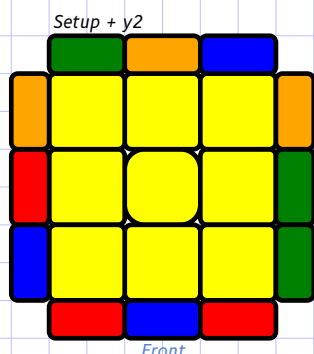
PLL #12 - Ra

R2 F2 U R U R' U' R' U' F2 R' U R'



★★★ [R U' R] F2 U R [U R U' R'] U' F2 R2
 ★ R U2 R' U2 [R U R'] F' U' F U [R' F R F']
 ★ R2 F [R U R' U'] F' R2 F R F' R2 U [R U' R]
 ★ R U2 R D [R' U R] D' R' [U' R' U R] U R'
 ★ F U' [R U R' U'] R' F' R [U R U' R'] U' F U2 F'
 [R U' R] F2 [R' U R] F2 R2 U' M' U2 M
 F' R' U u' [R U R'] D [R U R' U'] B U2 R
 R U2 R' U' R' F' R U2 R U2 [R' F R] U' R'
 R U2 R' [U R' U' R] F' R' F U F' R F [R U R']
 R U2 R' U2 R B' R' U' R U R B R2
 F2 R' F' U' F' U F R F' U2 F U2 F'
 R' U R' U' R2 F R' F' R2 F [U R U' R'] F' R2
 R F' [R' U R U'] F2 R' F' R2 F R' F' R' U R'
 F R U2 [R' U R] L' U R U' L U R2 U F'

★ F U2 F' U [R U R' U'] [R' F R] [U R U' R'] U F'
 ★ F U2 F' R' U' R U F [U' R' U R] U2 F'
 [R U' R] F R F' R2 F R F2 [U R' U' R] F R'
 F' U B' U' F [U R' U' R] U2 R' U' R U' B
 R' B' U' B R' B' U R' [U' R' U R] B R2
 R F R' F U2 R F' [R' U R] F R' U' F R F' R'
 R2 F' U' F U R' U2 R U F' U F [R U' R] U R
 F U2 F' R F U R2 U' F R2 F' U R2 F' R'
 R' U' F R' F' R2 U' R' y U2 R' U [R U R' U'] R B
 F U' F U F R' U' R U F [U' R' U R] F' U' F2
 R2 U F2 R' U R' U' R2 F2 U [R U R' U'] R' U2 R2
 F U2 F' R' F' L' F R y' [R' F R] U [R U R']
 F' [R' F R] U' R' F' [R U R'] F2 U' F' U F2 R F
 S' U' F' U f U2 F' U F U [R' F R F']

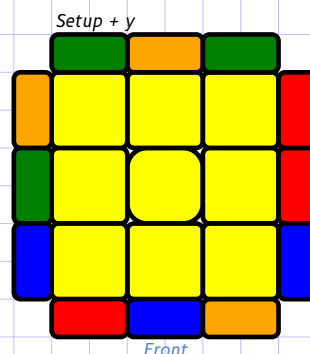
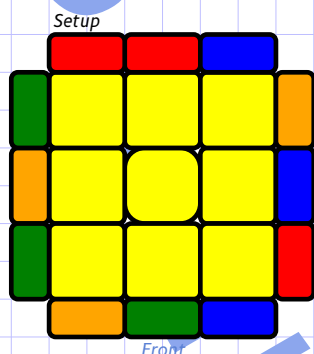


★ F2 R' F' U' F U F U' R F [R' U R] F
 ★ M' U [R' U R] U2 r' U R y U [R' F R F']
 B' U [R' U R] U2 [R' U R U'] F' U B U' F
 [R U R'] F' U' F [R U R' U'] R2 y R' F' R U' F'
 R U R2 U [R U' R] U' R2 U R F [U R' U' R] F'
 F' R' U' R F' R' U' F' U' F' U F R F2
 [R U R' U'] [R' F R] U2 y' R' F R' F' R2 U2 R'
 F' U [R' U R] U F U' F' R' U' R U' F R' U' R
 [R' U R] F' U [R' U R] F U F' U' R' U' R U' F
 F [R' U R U'] F' R' U' R2 U R' U R' U' R2 U' R'
 R U2 R2 F R F' R U' R' F' U F R U' R'
 B' R2 F R' F' R2 [U' R' U R] y R U' [R' F R]
 R' U' R U2 r U2 R F R F' R2 U2 r'
 R' U' F' U R U' F' U' F' [R U R'] F' U F'

★★★ R2 F2 U [R U R' U'] R' U' F2 R' U R'
 ★ [R U R'] F' R U2 R' U2 [R' F R] U R U2 R'
 ★ R2 B' R' [U' R' U R] B R' U2 R U2 R'
 R' F' [R U R'] F' U' F [R' F R] F2 U F2 R
 F U [R' F R F'] [R U' R] B' R2 F' R B R'
 R2 F' U' F R U F' [U' R' U R] F2 R' F' R2
 F U [R' F R] F2 U F U2 R' F' R [U R U' R']
 R' F2 U' F2 R' F' R F' U F R U' [R' F R]
 R' U' F' R U2 R' U2 B' [R' F R] B U' R
 F U' r' F R' F' M' U' R U2 R' U' R2 F'
 F [R' U R] U' F U [R' U R] U2 R' F U' F' U R
 R U' R' F' R' F U' F' R F [R' U R U'] R U2 R'
 R' U' B' U F' U' F B [R U R'] F R' F' R2
 R U' R' U' R U R D R' U' R D' R' U2 R'

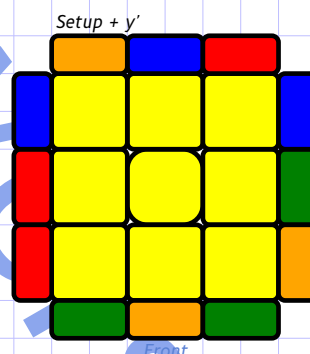
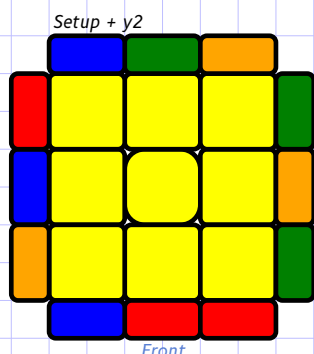
PLL #13 - Rb

R' U2 R U2 R' F R U R' U' R' F' R2



★★★ (R' F R F') U R U' r' U2 (R U R' U') M'
 ★★ R' U (R U R' U') F' (U R' U' R) F (R' U R) U2 R
 ★★ R2 F R (U R U' R') F' R U2 R' U2 R
 ★ R' U (R U R' U') R' D' (R U R') U F U2 F
 ★ (R' U R) U2 R' U' R F (R' U R U') F' R' U2 R
 ★ F R U' R2 U2 R F' r' F M' U2 R
 F' U F' R2 U' F' U' F' U F U R2 F2
 R2 B2 U' R' U' R U R U B2 (R U' R)
 (R' U R) U R B (R' F R) B' R' F' R' U2 R
 R' U F' M U' (R' F R) U M' F U2 R
 (R' F R F') U R U B U B' R' F' U2 F
 F' U2 F' u' R U' R' D R (U R U' R') U' R
 R2 F2 R F2 U R U2 r' F' M' U2 R
 F U' f R F' (R' U R U') R2 U (R U' R) f'

★ F R' F' R2 U' R' F (R U R' U') F' U (R' F R F')
 F2 R2 U' F' U' F U F U R2 F U' F
 (R' F R) B' R2 F' (R U' R) y (R' F R F') U R
 R U2 F (U' R' U R) D (R' U R) U D' F' R'
 F R F' U' F (R U R') F R' F' R2 U' R2 F'
 (R U R' U') R' U2 R' F R2 U (R U' R) F' R U2 R
 R' U' F R' F' R2 (U' R' U R) B U' B' (R' U R)
 R2 F (R U R' U') F' U R2 U' R' U F' U' F U' R
 R2 U (R U R' U') R' U' F2 R' U' R' U' R2 F2 R2
 R2 F2 R2 U (R U' R) F2 U R (U R U' R') U' R2
 R U2 R' U2 R' U F R (U R U' R') F' U2 (R' U R)
 F2 (R U R') F' U' R U F U' F' R2 F R F2
 F R2 U R2 F R F' R U' R' F' U F R' F'
 F R (U' R' U R) U R' U2 F' U' F2 R' F' R U' F'

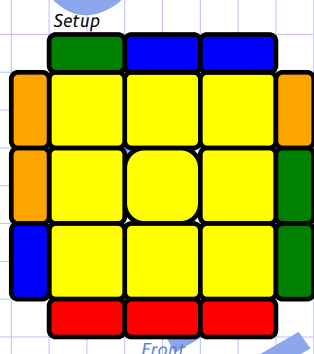


★★★ R2 F (R U R' U') R' U F' R' F U' F' R'
 ★★ R F U F' R F U' R (U R U' R') F' R2
 ★ R2 F (R U R' U') R' F' R' F' (R U R' U') R' F
 B U' F U B' U' (R U R') U2 (R U R' U') F'
 F' R (U R U' R') F R F R (U R U' R') F' R2
 F' U' F (R U R') F' U' F (R' F R) F2 U2 F
 R U' F U' F' (U' R' U R) y' (R U R' U') B' (R U R')
 F2 R' F' U' F (U R U' R') F' (R U R') F R F2
 R2 U F' U' F (R U R' U') R' F' U2 F U' R' U' R'
 R2 F2 (R U R') F2 r F M' F2 R U M2
 F U R U' F' U' (R U' R) U R F' U' F (R U' R)
 L2 f U (R U R' U') B' U R2 U' R2 U
 (R' U R) F R2 F2 U' F2 R' F2 U F R' U' R'
 R2 F (R' U R U') R' F R2 U (R U' R) F' R2 F' R2

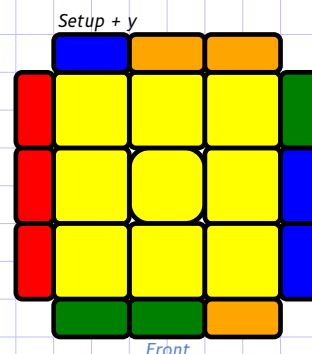
★★★ R' U2 R U2 R' F (R U R' U') R' F' R2
 ★ R' U2 R F (U R' U' R) F' (R' U R) U2 R' U' R
 R' U2 R' U' R F' (R' U R U') F (U R U' R') U' R
 R' U R' B2 U' R' (U' R' U R) U B2 R2
 M' U R U' r' U2 R U' R' U' F R' F' R
 R' U2 R F U F' U' R' U F U' F' U2 R
 B' U2 (R U R' U') B (U R U' R') B' U2 B
 R' U2 R U' F' L F R' F' L' F U' R
 R' U2 M F' r F R' U2 R2 U R' F'
 F U F U' F (R U R' U') F U2 F' (U R U' R') F2
 R' U2 R U R B R' U2 R' U2 R B' (R' U R)
 R' U F' U F U' R U R2 U' F (U R U' R') F' R2
 F U (R' F R) F2 U F U2 R U' R' U' (R U R') F'
 R' U2 R F U2 (R U R') F' R' U' F2 R' F2 R2

PLL #14 - Ja

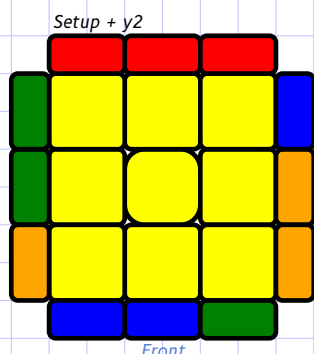
R' L' U2 R U R' U2 L U' R



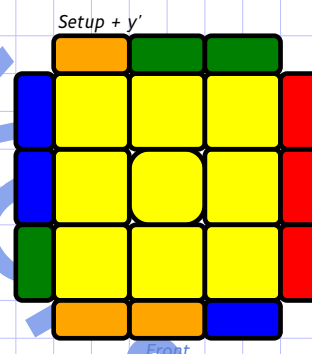
★★★ F' R' U F U F' U2 R F (R' U R)
 ★ R' U' R2 B R' (U' R' U R) B' (R' U R)
 ★ R' F' U' (R U R' U') (R' F R) U F R' F R2
 F R' U' R F' R' U2 F U' F' U' R
 R' U r' F2 R F' R' F2 R r
 B' U (R U' R) F' (R' U R) F R2 U' B
 F U F' U' (R U R' U) F U2 F' U' (R U R')
 R' U' (R U' R' U) F (U R' U' R) F' R' U R2
 R2 F' U' F R2 B' u R' D' R2
 R' U F' L' U' L F2 R' F' R2
 R' F R' U' R2 U' R2 U R' F' R U R2
 (R' F R F') U' R U R2 U' R F' (R' U R) U F
 F' U R' U2 (R U R') U2 R U' F (U R' U' R)
 B' R B R F' R (U R U' R') U F R



★★★ R' U B' U (R U R' U') B U2 R
 ★ F' U2 R' U F U' F' U' R U' F
 ★ R2 U' R F (R' U R U') F' U' (R U R' U) R
 ★ R' U2 (R U R') U2 L U' R U L'
 ★ F R U' R2 U' R U (R U R') F' (U' R' U R)
 ★ R2 U' (R' F R) U' R2 U R2 U R F' R
 (R' F R) F u' F' (R U R') F D R2
 R' U' (R' F R) U' (R U R') F' R F (R' U R) F'
 R F' R2 F U' F' U' (R U R' U) R2 F R'
 R2 F R F2 L' U L F U' R
 F2 U' F2 R' U' R F2 (R' U R) U F2
 R' F U' F' U' (R U R' U) R2 F (R' U R) F' R'
 R F' (R' U R) F R' U R' y U' (R U R' U) F
 (R U' R) F (R' U R) F' R U F U2 F' U' R



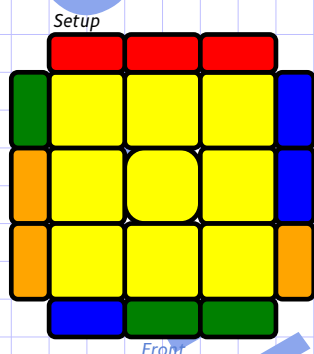
★★★ F' U2 R F (R' U R) F' R' U F
 L F U2 (R' F R F') (R U R' U) F' L'
 F2 U' F R U r' U F U' M' U' F
 R' U F U2 F' U' R2 F R' U' R F' R'
 R' U' F R' U R' F' (R' F R) U' R2 F' (R' U R)
 R F' R' U' R' U' R F (R' U R) F' U R F R'
 R F R' U2 R F' R2 U y' (R U R' U') B
 R' U' R' U' R2 U F' U' (R U R' U') R2 U2 R F
 L' U F (R U R' U') F' L F (R' F R) F2
 R' U' F R2 U' F' U R' U' F U R' F' (R' U R)
 F' U (R U R' U') R U R B' R F R2 B R'
 (R U R' U') F' U2 F U R U R2 U' F' U F R
 F' U' R' U' R F R' U R2 y U2 (R U R') F'
 F' U R2 U F U F' U' (R U' R) U' F U (R' U R)



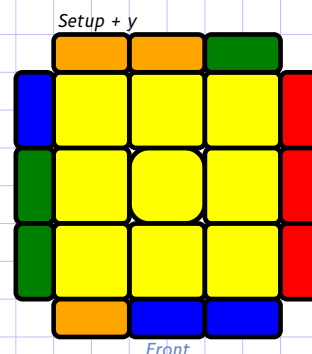
★ (R' U R) F' R2 U F U F' U' (R U' R) F
 F R U (R U R' U') R' U' F R F' R2 F R F2
 (R U R' U) F U F' U' R U2 R' U F U F'
 M2 F r U2 (R' F R) U F' r U R2
 R' r' U' (R' F R) F2 U F2 R F r
 R' U' R' U' F U R2 U2 R' U' (R U R') F' R
 B R' B2 U (R U R' U') y (R U' R) F R'
 B2 R2 U' R2 U R2 D' R2 u R2
 (R U R' U) F R' U2 (R U R') F' (R' F R) U R F'
 (R U' R' U) B' U' (R U R' U') y R U' R' U2 R
 R U2 R F' (R' U R) F R' y U F' U' (R U R')
 R F R' U R' U' R' U (R' F R F') U' R' F' R'
 B' U (R U R' U') B' U' y R F (R' U R) F' R
 R2 B' U (R U R') U2 B y F (R' U R) F

PLL #15 - Jb

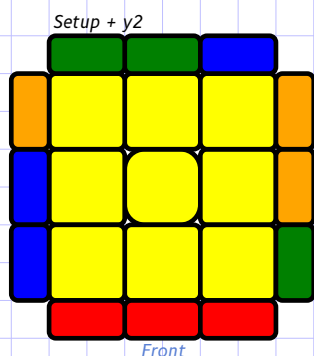
R L U2 R' U' R U2 L' U R'



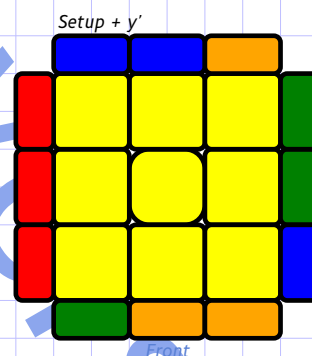
★★ R U2 F [U' R' U R] U F' U R'
 ★ (R U R') F U F' R F U' F' U' R'
 ★ R U' L U2 [R' U R] U2 R' L'
 ★ (R U R' U') [R U R'] F' U2 F U2 [R' F R F']
 [R U R' U'] R2 U R' F' [R' U R U'] F R U' R2
 R' F' [R' U R] U F U' F' U' F R' U' R2
 [R U R' U'] B' [R' U R] U R U' R2 U' R B
 F2 R' F' R2 B U' B' R' U F'
 F R' F' R' B R' U' [R' U R U'] B' R'
 F B U2 F' U' F U2 B' U F'
 R B [U R' U' R] U R B' R F R F'
 F2 R' F' R2 U' R' U F [U R U' R'] F2
 [R U R' U] R U' B' U' [R U R'] B R U' R2
 B' [R U R' U] R U2 R' F' U B U' F



★ R' F U F' R F U2 [R' U R] U F'
 F2 [R U R' U'] R2 D R D' R F2
 F2 [R U R'] F2 r F' r U r2
 F U' R U [R U R' U'] [R' F R F'] U' R' U F'
 F U' R' U' R U2 F' R' F U' F' R
 F U' R B U B' R2 F R F2
 [R' U R U'] F [U R' U' R] y' U [R' U R] U2 R'
 F U' R2 B [R U R'] B' [R U' R] U F'
 F U R U F' U [R' U R] U2 F U' R' F'
 F U' f R2 F' R F R2 F' f'
 B' [R U' R] U F' U F U' R2 B [R U R']
 M' U2 [R' F R F'] R U2 r' U R U2 R'
 F2 [R U R' U'] F' U' [R U R' U] F2 r U r'
 R' U2 R U' F U' R' U' R U F' U2 [R' U R]



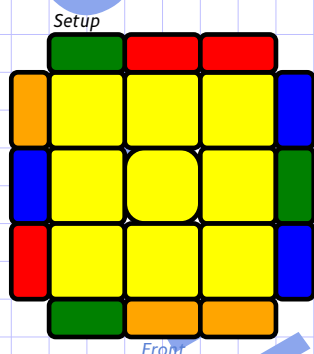
R U R U' [R' F R F'] R [U R U' R'] F R2 F'
 L U' F [R U R' U'] [R' F R] F2 U L'
 R U2 R' U2 [R' F R] U [R' F R F'] R U' R' F'
 L U' R U2 F U2 [R U R'] F' R' L'
 R U' F [U R' U' R] U F' U F U2 F' U R'
 R' U R' U' R2 F' R' F U R' F' R2 F R'
 B U' R U' B' U' B U R' U2 B'
 B U' R' U' [R U R' U'] R' F R' B' R2 F' R
 R' F U F' R' F U' F' R2 F' [R U R' U'] R' F
 R F' R F' [R U R' U'] R' F2 U F' R' F U' R'
 R F U F' R F U' F2 R [U R U' R'] F R2
 R' U r' F' R U F2 U' F' U F' U' r
 F R D' R2 U R' U' R2 D F' [R U R' U'] R'
 B U [R U R'] B' R U' R2 U2 F' U' F R



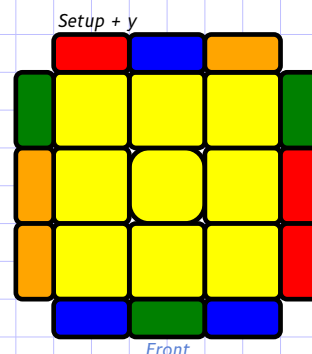
★★ (R U R') F' [R U R' U'] R' F R2 U' R'
 R2 F' [R U R' U'] R' F2 [U' R' U R] U F' R2
 F' U' [R U R' U] F' U' [R' F R] U F U' F
 R2 U R2 D' R2 u R2 U' R2 F2
 R U' F' U [R' U R] U2 F [U' R' U R] U2 R'
 R' F' [R U R' U] F U F' U' R U2 [R' F R]
 R' F' R U2 R F [R' U R] F' R' U [R' F R]
 R U2 R' U' R U2 L' U R' U' L
 R F' R2 F R U' F' R F R2 U [R U' R]
 B U R' B' [R U R'] B R U2 B'
 R2 U R' F' [U R' U' R] F R U' R2 [U R U' R']
 F R2 U [R U' R] F' R U R2 [U R U' R'] U' R'
 F U' R' U2 [R U R'] F U F' R F U' F2
 F' U F' U' R' F' R U F U' [R U' R' U] F

PLL #16 - T

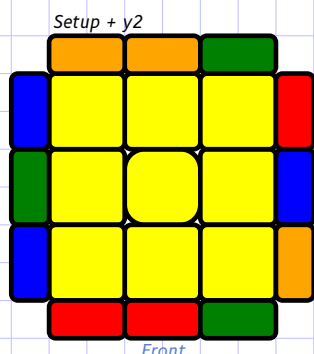
F2 D R2 U' R2 F2 D' L2 U L2



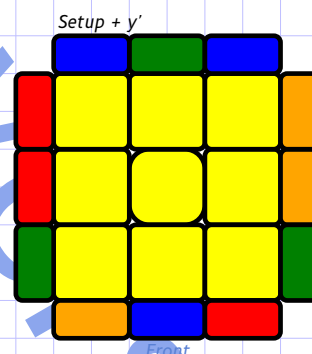
R U' F U' R U F R' F' U' R' U2 F' R'
 R U2 [R U R' U'] R' F R' U R' U' R2 F' U2 R'
 R U2 F R2 U [R U' R] F' R [U R U' R'] U2 R'
 R2 [U R' U' R] F2 R' U R' U2 F2 U R2 F2
 R' U' F' U2 F U F' U [R U R' U] R U2 [R' F R]
 F U F' U' R' F' U' [R' F R] U F R F U' F'
 [R U R' U'] R' F' U' F2 R' F' R' F' U F R2 U' R'
 R U R2 F' U F [R' U R] F' U2 F [R U' R] U2 R
 R U R2 F' U' F [R' F R] F2 U F R [U R U' R']
 F r U2 F R F R F' U' R' U F' U' r'
 R' F' R U' F R' U' F U R U' F2 U2 [R' F R]
 L2 U' L2 D F2 R2 U R2 D' F2
 R2 U' [R U R'] B2 [R U' R] y U2 R2 U' F2 R2
 B U2 F R F' R U R2 B' U' R' F R' F'



F' U R' U F' U' [R' F R] U F U2 R F
 R' U' R U F R U F R' F' U' R' F' [R' U R]
 F2 R2 U' F2 U2 [R U' R] F2 [R' U R U'] R2
 R' U R' b2 U' R' [U' R' U R] U b2 R2
 M' U R2 b2 [R U R'] b2 R U' R2 r'
 B' U' B U2 B' [R' U R U'] R' U [R U R' U'] R B
 B U F B' R U' R' B U' B' [R U R'] F'
 R' F' R U2 F2 U R' U' F' U R F' U [R' F R]
 R' U R' F2 R U R U2 r' F M' F2 U' R
 R' U2 F [U' R' U R] U F' U R' U' R2 U R2 U R2
 F2 U2 [R U' R] f2 [R' U R] f2 R2 U' F2
 R' U [R U R'] F2 R U2 R' U2 R' F2 R2 [U R' U' R]
 R' B' R2 D' F R U F' U' F' R' u F' R
 F2 R F' U' R2 U' R' U R' U' R' U2 F R' F2



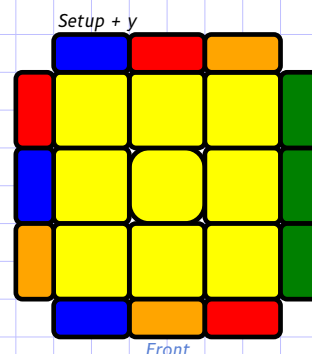
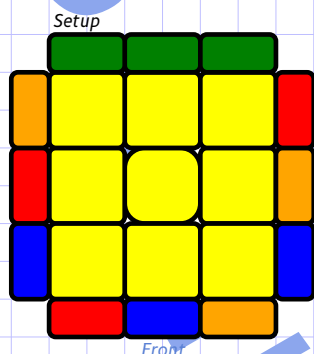
★★ [R U R' U'] R' F R2 U' R' U' [R U R'] F'
 ★★ F R [U' R' U R] U R2 F' R [U R U' R']
 ★ [R U R' U'] [R' F R F'] [R' F R] y' R' [U' R' U R]
 B' [R' U R U'] R' U' R2 B R' [U' R' U R]
 R' U' R U R B' R2 U [R U R' U'] R B
 F [R U' R' U] [R U R' U'] [R U R'] F' U2 F U' F'
 R' U' R B U [R U R' U'] B' [R' U R] [U R U' R']
 R2 D' F2 U F2 R2 u R2 U' R2
 R2 U R2 u' R2 F2 U' F2 D R2
 R' F [R' U R U'] F' U' [R U R' U] R U R2 U' R2
 [R U R' U'] R' U' [R U' R' U] F U R2 U' R2 F' R
 R' U' R r' U' F U [R' F R] U' F' U r
 R' U' [R U R' U] R2 F [R' U R] F' R2 F U' F' R
 B' [R' U R] F' U' F R' U' R F' B U F



R F R' U' R F' [R U R'] F [R' U R] F' R U' R2
 F' U' F B' [R' U R] F' U F R' U' R B
 F' U' F U F R' F2 U F [R' F R F'] U' R
 F U F' U2 F R U' [R' U R U'] R' U' [R U R'] F'
 L F U' F' [R U R'] F U F' R L' U' R'
 R' U' R2 U F R2 U' R2 F' U' R' F' [R' U R] F'
 R' F' U F U' F' U' F2 R F' U' F' U F
 R F R2 F' [R U' R] F' [R' U R] F R' U R2 U' R2
 F' U' F U F2 u' R U [R U R' U'] R2 D R'
 F [R U R'] F' U' R' U F' R' F' R F2 U' F' R
 R' F' U F U' F' U' F R' U' R F' [R' U R] F R
 F U S U R' U' F R' F' R2 f' [R' U R]
 R' F' R' U' R F [R' U R] F' U F U F' U' F R
 F U F' r' F2 R' F' R U' F' U M' U R

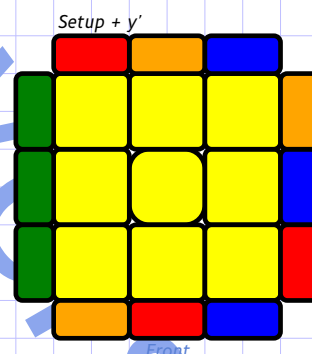
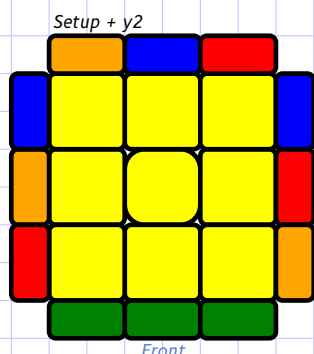
PLL #17 - F

R B' L U2 R' F R' L2 D2 L2 F' R L'



★★★ R [U' R' U R] U F [R U R' U'] F' R2 F R F'
 ★★ F R' F' R2 F [U R U' R'] F' U' R' U' [R U R']
 ★★ F U' R2 U [R' U R U'] R' U' [R' F R F'] R' U F'
 ★ R U F' R F [R U R' U'] R' U F' R' F U2 R'
 ★ F2 R' F' R F [U R U' R'] F2 U' F U F'
 ★ R2 [U R U' R'] F [R U R'] F R' F' U' R' F' U R'
 ★ R U R U F' U' [R U R' U'] R' U2 F U' R' U2 R'
 ★ [R' F R F'] U R L U' R' y' U F' U2 [R' U R]
 ★ R2 U [R U R' U'] R D' R' u F' R2 U' R2 F2
 F R' F' R2 U' R U B U' B' R2 U' [R U R']
 M' U' R2 F2 R2 r' F r' F2 R U' r
 [R U' R' U] R2 B U B' U' R' U R2 F R F'
 F' R' F U' F' U F' R U' R' F' [R U R'] F R F'
 F' R' F' R U' R' F [R U R'] F U' F U F' R F

★★★ F U' F' U F2 [R U R' U'] F' [R' F R] F2
 ★ F U' R F R' F' R U [R U R' U'] R U' R2 U F'
 ★ F' U2 F' U' R' F' R2 U' R' U [R' F R] U' F'
 ★ F' U R' F' [R U' R] U R2 F R U F U2 F
 F2 U' R' U' [R U R'] F2 U [R U R' U'] R' F2 R2 F2
 F2 R2 U R2 F u' R D [R' U R U'] R' U' R2
 F' U' F U2 L U' [R U R'] L' U' F R' F' R
 F' U' F U F R U R2 F' R F R U' R2 F' R
 F [R U R' U'] R' U2 u' F' R' F U2 D R' B
 F2 U' F2 u R2 U [R U' R] F2 [R' U R] D' F2
 R' b2 U2 [R' U R U'] R U2 b2 R U2 [R U R']
 L F' L' F2 U' F [U R U' R'] y' R2 U' [R U R']
 F2 [R U R'] F2 r F U2 M' U2 F2 R U r2
 F' U' F' R F2 U F [R U R'] F' U' F R' F2 U F

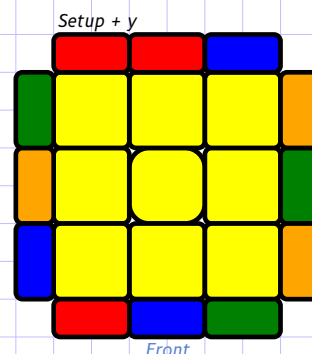
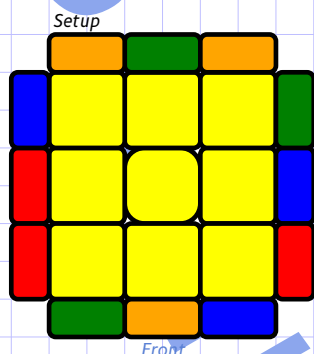


★★★ [R' U R U'] R2 F' U' F U R F R' F' R2
 ★ [R U R'] U2 B' U F' U' F B U [R' F R F']
 ★ [R U R' U'] R' F' U' F2 R F' R' F' U F2 R F'
 R U R F' R2 U' R' F' U' F [R U R'] F R2 U' R'
 R U' F R F' U F' U' F2 R' F' U' R' U2 R'
 B' R B R2 B' [U' R' U R] B U [R U R' U'] R
 R U2 R U F R F2 U F U' F R' F' U R'
 R' U F' [R' F R F'] U' F' U' F U F' U F2 U' R
 [R' U R U'] R' U' B' R' U' R y U R F2 R' F' R
 R2 U' R' U' [R U R'] D R D' R F2 U F2 R2
 R2 F2 U' F2 R' D R' D' R [U' R' U R] U R2
 R2 [U' R' U R] B' R' U' R y [R' F R] U F R U' F
 R' U2 R' U' B U2 R' U' [R' U R U'] B' U R U R
 B' U R2 U' R [U' R' U R] U R y R' F' R F U' R

★★★ R2 F R F' R' U' F' U F R2 [U' R' U' R]
 ★ R U' F R U F R F' R' U' R' F' [R U R' U'] R2
 R F [R' U R U'] R F' U F R F' U' F R' F' R'
 R F R F' U F R' F' U' F R' [U' R' U' R] F' R'
 [R' F R] F2 R' U' F' U F R U F U F' U' F
 F R' F2 U' F R F R' F2 U F R [U' R' U' R]
 F' U' R F' R' F' U' F U F U' R F R' U2 F
 F' U F U' F' U' R' F' U' F U R F2 R' F' R
 R2 F2 U R' r2 [U' R' U' R] r2 U' F2 R' U R'
 F U F' U2 R' U L' U' R y' F U [R' F R F']
 F R' F' R U' F' B' U F U' B U2 R U' R'
 F2 U' F' U F R' F' U' F [R' F R] U F R U' F
 B' R B R' U F B U' B' U F' U2 [R' U R]
 R' U F2 U' F U' F' U F U F R' F' R F U' R

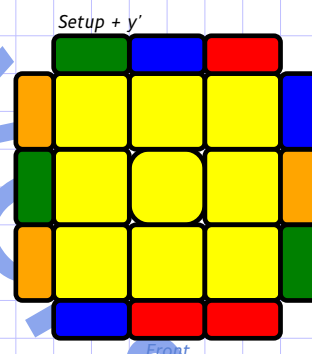
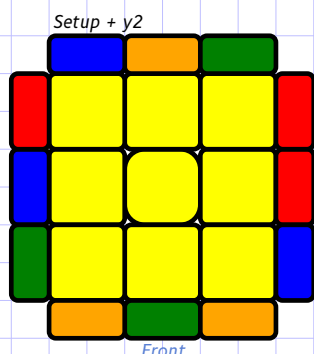
PLL #18 - Ga

L' U' L F2 D R' U R U' R D' F2



★★★★★ R' U' F' U F U' R F [R' U R U'] [R U R' U'] F'
 ★★★★★ F2 D R' [U R' U' R] u' R2 F' U F
 ★★★★★ F2 R2 U F2 U F2 U' [R U' R] F2 [R' U R]
 ★★★★★ F2 U R U2 R' U' R' U2 R2 U R' F2 [R' U R]
 ★★★★★ R F U' D R' U2 R D' [R' U R] U F' U R'
 R' F R' F' R2 F U' R2 U' R2 U R' U R' U' F'
 F2 M2 D R2 D' R2 U R2 U' r2 F2
 R L U2 R' L' B' U F' U2 B U' F
 R' U' F2 U R U2 R U2 R' U F2 U2 R U' R'
 R2 B2 R2 U R2 S2 [R U R'] b2 [R U' R]
 B L2 F R' U' R U F' [U' R' U R] L2 B'
 R' B2 R2 F U' R' U' R U F' U R2 B2 R
 R2 F2 R2 U r U2 M U R F2 R' U R'
 R F U' F R F2 U F2 R F' R' U' R' U F' R'

★ B U' R U2 R' B' U R2 F' [R' U R] F R2
 ★ F [R' U R] U F' R' U' y' [R U R' U'] B U2 [R U R']
 ★ R2 U' R' U' F' R' F U R' F' R' U R' U' R' F
 ★ F' U' R' F' U' F2 U F R U F U2 R U' R'
 ★ F' [R' U R] U F' U2 F' [U' R' U R] F' U F U F2
 ★ B' R2 B [U R U' R'] U2 R' U' F R' F' U R
 F R2 F2 [R U R'] B R U' R' F2 B' R2 F'
 F2 R2 F2 U R' [U' R' U R] F2 R2 F2 U' [R U R']
 F B U2 F' B' R' U r' F2 R F' r
 F' R' U2 F U F' U R F [U R' U' R] U2 R' U' R
 R U R2 U' R2 U F R F' U R' U' F R' F' U R
 R2 U' R' F R' F' U D' R' F' R2 U' R' F u
 R' U' [R U R'] F U F' R U2 R' U2 R U2 F U' F'
 R U' r' F U2 M' U r' F' R U2 R' F' r

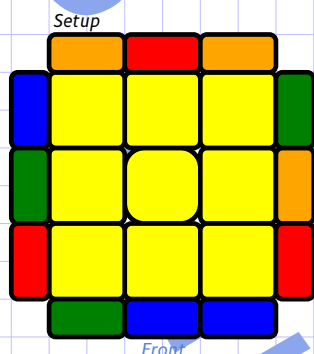


★★★★★ [R U R' U'] R' U F R [U R U' R'] F' U R' U2 R
 ★ F [U R' U' R] F' R U R2 U R2 U2 R' U [R' U R]
 ★ F R2 B R' F' R U B' U' R' F R' F'
 ★ R U2 R' U' F' R U R2 U' [R' F R] U R2 U2 R'
 ★ R' U F' [R U R' U'] R' F' R U2 R U2 R' F2 U' R
 [R U R' U'] B U2 R U' R' y R' F U' F' U' [R U R']
 [R U R' U'] B U2 R U2 R' B' R' U [R U R'] U2 R
 F2 R2 U [R U' R] F2 R' U R' U R2 U' R2 U' R2
 F R' U' R2 U' R2 U2 R U' F' R' U' F' U F R
 F' U' F R' F2 R F U F R U2 R' F U' F'
 F2 [R U R' U'] F2 U2 F U' F [U R U' R'] F' U2 F'
 R' U R' U' R2 U' R F U' R' U R' U R2 U F' R2
 M' F2 M' U' F2 R2 U' L2 U R2 U' R2
 [R U R'] B [U R' U' R] U R U2 B' R' U2 R' U2 R

★★★★★ R2 u R' [U R' U' R] D' F' U2 [R U R'] F'
 ★★★★★ R2 U R' [U R' U' R] U' R2 U' D [R' U R] u'
 ★★★★★ R2 F' U' R' U' R U F2 R [U R U' R'] F' R2
 ★ R' F [R' U R U'] F' R2 U2 R' U R2 U R2 U R
 ★ F U R2 F' [R' U R] F R' U2 R' F' U R' U2 R
 ★ R2 U R' U R' U' R' U2 R' U F [U R' U' R] F' R
 ★ R2 F2 U R F' R U R2 U' [R' F R] U' F2 R2
 ★ R' F' U R' U2 R U2 F U' F' [R' U R] F U2 R
 ★ R2 F2 R' U2 F [U' R' U R] U F' U R F2 R2
 ★ R2 U R' [U R' U' R] U' R y R F U' F' U R' F
 ★ R U' F R' F' [R' U R U'] F R2 F' R' U F' U' F
 R2 D B' U B' U' B u' B2 [R' U R]
 R2 F2 U R2 F U F' R2 F U' F' U' F2 R2
 F R [U' R' U R] U R2 F' U2 R U R U' R2 U2 R

PLL #19 - Gb

F B U2 F' B' R' U L' U2 R U' L



☆☆☆ R2 F [R U R' U'] R' F2 (U' R' U R) U F R2

☆☆☆ F' U' F R2 u (R' U R U') R D' F2

★ [R U' R] F2 R' U' M' U2 r' U' R2 F2 R2

R' U' R2 U' R2 U' R U2 R2 F (U R' U' R) F' R

F' U F U' R F R2 F' (U R' U' R) F R F' U R'

F R2 F2 B (R U R') B' R U' R' F2 R2 F'

R2 F2 U F U F' R2 F U' F' R2 U' F2 R2

F U' F' U' R2 F (R' U R) F' R' U' F U2 F' U R'

R2 F2 U R2 D' R2 u R2 U' M2 f2

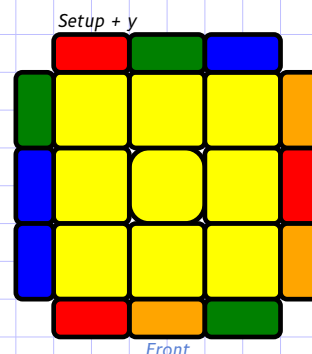
R2 F2 U R' F' R U R2 U' R' F R' U' F2 R2

F U2 F (R U R' U') F' U F' U2 F2 (U R U' R') F2

L' U R' U2 L U' R F B U2 F' B'

R2 F2 R' U' F U' R' U' R U F' U2 R F2 R2

B R U2 D' F' R F U u (R' U R) U F' R2



☆☆ R' U2 R U' F (R U R' U') R' F' U' R (U R U' R')

★ (R U R') U2 F' U' R' F' U' F2 U F' R U F

★ F' R U (R U' R) F R U' F' R F U R U R2

★ R U' F R F' U R U2 (R U R' U') F' U2 F R2

(R U R') U2 F2 U' R U2 R' U2 R' U' F2 U R

R U2 R2 U' F U F' R2 F U' F' (R' U R) U2 R'

(R U R') B U2 B' R' U' R' B' R2 B (R' U R)

R F U F2 (R' U R) F R' U' F R U' F' R U R2

R2 U R2 U R2 U' (R U' R) F2 R' U R' U' R2 F2

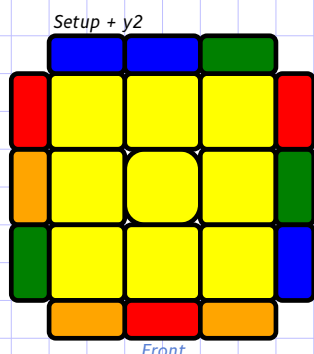
R U2 R2 U' R' F' R U R2 U' R' F U R U2 R'

(R U R') U2 B' R' U' R' y R' F2 R F' U F R

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R' U' F R F' U R U' F R' F' U' R2 U R2 U' R'

F' R U R2 F R U' D F R F' R U R2 u'



★ F (U R U' R') (U R' U' R) F' R' U F' U' F U R

F U (R U' R) U' R2 U R2 U F' R2 F R F' R

R' U' R F2 R' U R' U F2 U' F2 U' R2 F2

R2 U' R' U' R2 U2 F R F' y U' (R' F R) U' F

F U F' R U2 R' F' U' F' R' F2 R F' U F

R' F' U' F U R F U R' U2 R2 U R2 U R F'

(R U' R' U) F U F' R y' (R U R') U2 B' (U R U' R')

F' U' R' F' U' R' F' R F2 U F' R F (R' F R F')

R U B' (R U' R' U) B R2 U R2 U R2 U' (R U' R)

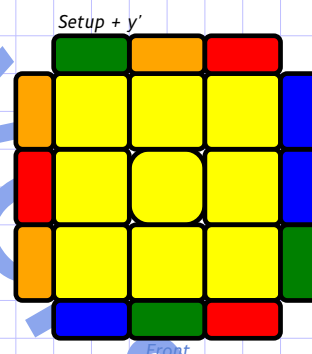
R' U L' U2 (R U' R) U u R2 U' D' F' B

F U F' U2 R' U2 R U2 R' F U' F' R (U' R' U R)

F U' F' R' F' U' (R' F R F') U2 F U' F' U' F2 R

F R U R2 U' F' U2 R U R U' R2 F' U' F U' R

F' R2 F' U R2 U' R2 D R2 D' R2 F R2 F



☆☆☆ R' B U' (R U R') B' R' U (R' U R U') R U' R2

★ F R F' R U B U' (R' F R) B' R2 F'

★ R' F (R' U R U') F' U' R U2 R U (R U' R) U' R2

★ F R U' R' U2 F D (R' U R U') R u' R2

★ R' U' (R U' R) U2 R2 U' R2 U' R' F (R' U R U') F'

★ (R' U R) U2 (R' U R U') F' R' U' F U' F' U2 R F

R2 F U' R2 U' (R U' R) U F' R' U R2 U (R U' R)

R' U F2 R U2 R' U2 (R' F R) (U R U' R') F U' R

R2 F' R' U' R F R2 U' B R U2 R' U B'

R' B2 R2 U' F (U' R' U R) U F' R2 B2 R

R' U2 R2 U R' U' R' U2 F R2 U' R' U' (R U R') F'

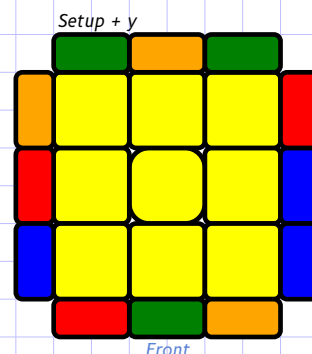
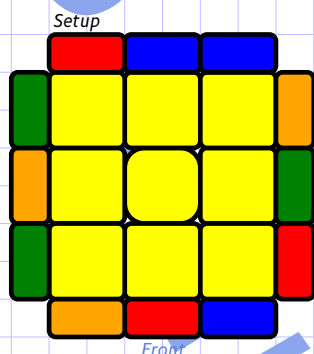
R2 B U' R U2 R' B' U' R2 U2 F' (R' U R) F

R' U' R F2 R U' R2 U2 R U R U2 R' U' F2

R U' F U' R' U' R D R' U2 R U D' F' R'

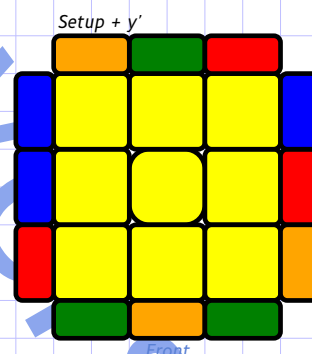
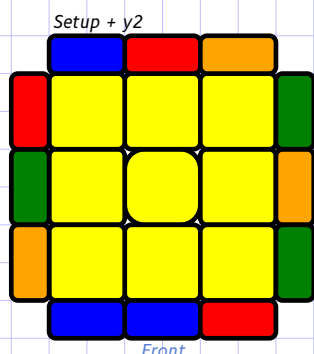
PLL #20 - Gc

B U B' R2 D' F U' F' U F' D R2



★★★ R2 U' R U' [R U R' U] R' F' [R' U R U'] F R'
 ★ R2 D' F U' F U F' u F2 R U' R'
 ★ [R U' R] U' R2 U R2 U R2 F [U R' U' R] F' U R
 R2 B U [R U R' U'] B2 R' [U' R' U R] B R2
 R2 F2 U' R2 U' R2 U F' U F' R2 F U' F'
 F [U R U' R'] U F' R' F U' F' U F' U' F U R
 R2 U' [R U' R] U R U2 R U' B' U' [R U R'] B R'
 R2 u' R U' [R U R'] D y R U2 F' U' F R
 R2 U' R U' [R U R' U] R2 y U D' F U' F' u
 R F' R2 F' U' R U' R' U2 R U' R' F R2 F R'
 F' R' U R' F' R2 U' R2 F' R F U F U' R F
 F' B' U2 F B L U' R U2 L' U R'
 R2 u R2 U' F2 M2 u R2 U' M2 F2 R2
 R U' F R F' U' B' R B U2 R2 U' R' U' R2

F2 R2 U' F2 R' U' R F2 [R' U R] U R2 F2
 R' U' R U F' U2 [R' U R] F [R' U R] U F' U' F
 R' U' R F' U' [R U R' U'] R' U2 F R U2 R U2 R'
 F' U [R' F R] F U' F' U R' F2 R F U' [R U R']
 [R' F R F'] R F R' U R2 F R' F' U' R' F' U' R'
 B' R2 F' R B R' U' F y U F [R' F R]
 F U' R2 U' R2 U [R' U R] U2 R' U R' U R2 U F'
 F R U' F U2 F' U2 [R' U R] F U' F' R' U2 F'
 B' U' [R U R'] B R' U' R2 U' R2 U2 [R U' R] U' R'
 R' L' U2 R L B U' F U2 B' U F'
 F2 R U F U F' U' R2 F' U' F' U F R F2
 R' U' R U R U' B' R' [U' R' U R] B U' R U2 R'
 R u2 R' F2 U R' U' F2 U [R U' R] u2 R'
 R2 F2 R U2 R U2 R' F2 R F [U' R' U R] U F'

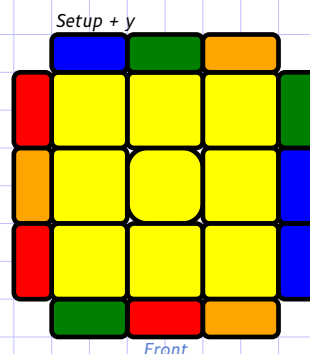
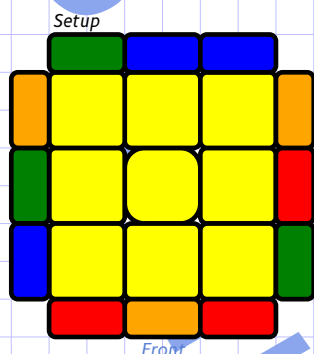


★★★ [R U R'] F R2 F' R' U' R' F' U2 F [R' U R]
 ★ R2 F2 R U2 R U2 R' F [R U R' U'] R' F R2
 ★ M2 U R2 F2 R2 U' [R U' R] F2 [R' U R] r2
 R' F2 L' F R F' U' L U F [R' F R]
 F R2 F' [U' R' U R] U2 R y U [R' F R] U' F'
 R U2 R F' R' U' R F [R U' R] F' U2 F [R' U R]
 F R2 U' R' U' R U2 [R' F R F'] U' R' F' R' U' R
 [R U R' U] F' R' U2 R U' F U R U R F R2 F'
 R2 F2 R U2 R F U2 [R U R'] F' R' U' F2 R
 F' U R' U2 R F U' R2 B R U' R' B' R2
 F' U [R' U R] F2 R U F2 U F2 U' R2 U' R F'
 R F' U2 F U R U' F R2 F' U' R2 U' [R' F R F']
 B [R U R'] B' U2 R2 U' F' R' U2 R U' F R2
 R' F U F2 U F2 U2 F' U R F [U R U' R'] F'

★ R F2 R2 B' U [R U R' U'] B U' R2 F2 R'
 F' L2 B' [R U R' U'] B [U R U' R'] L2 F
 R U F R' U R2 U' R' F' U' R' U2 F' U F
 B2 D' R U' [R U R'] u R2 B U' B'
 R' F U' F' U' R F [U R' U' R] U F' U2 R' U' R
 M2 U2 [R U' R] F2 R' U R2 r' F2 R' r'
 R F2 R2 F' U2 [R' F R F'] [R U R' U] F R2 F2 R'
 R2 U2 R U' F' U R2 U2 [R U R' U] R2 F R' U' R2
 R2 B2 R2 U' r' U2 M' U' R' B2 [R U' R]
 F B' U' D' R2 U u [R U' R] U2 L' U R'
 F2 U F U R F R' U' F R F U' F U F R'
 F2 R U2 R' U' F' U F U2 F U [R' F R] U' F
 R2 U2 R2 F2 U' R2 U R2 U F2 U2 R2 U' R2
 R F U' F' U' R U2 R U F U' F' R U' R' U' R2

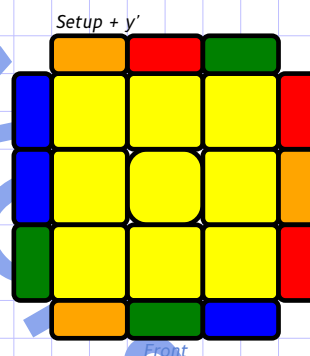
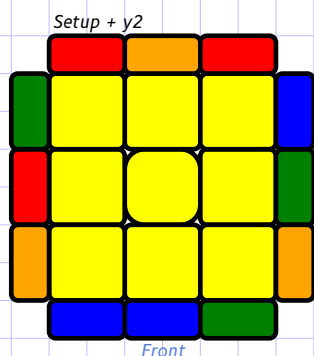
PLL #21 - Gd

R2 D' F U' F U F' D R2 B U' B'



★ F' U' F U2 R U F R U R2 U' R F' U' R'
 ★ F' U2 F2 (U R' U' R) F2 (R' U R) F U' F' U2 F
 ★ R2 U (R U R') F U F' U' R' U2 R' U F U F' R'
 ★ B U B' R2 u' (R U' R' U) R' D B2
 ★ F U' R2 U' (R U' R) U2 R' U' R U' R2 U R2 U F'
 R2 B' R' U' R U R B2 (U R U' R') U' B' R2
 F U2 F' B' R' U' R U2 F U' B (R U R') F'
 R U R2 U R2 U R' U2 R2 B' U' (R U R') B R'
 L U' R U2 L' U' R' F' B' U2 F B
 R F' U' F' U F' R' F' U R F' R' U' F' U' F2
 R2 U F R F2 (U' R' U R) U F2 R2 F' U' R' U R'
 F' U' F U2 R2 U F' U2 F U2 F U R2 U' F'
 F U R' F' R U' F' U2 F' U' F U r U2 r'
 F2 R F' U2 (R' U R) F' R' U' R U F U F R' F2

★★★ [R U R'] F2 u' F U' F' U F' D R2
 ★★★ [R U R' U'] D R2 U' (R U' R' U) R' U R2 u'
 ★★ [R' U R] U2 F U' (R' U R U') F' R' U F U F' R
 ★ B' (R' U R) U2 B' D' (R U' R' U) R' u R2
 ★ R2 B (R U R') B' R2 U F' R' U2 R U' F
 ★ F2 R2 U' R' U' R F2 (R' U R) F2 U R2 F2
 ★ R2 F R F' (U R' U' R) F R2 F' (U' R' U R) U R2
 ★ (R U R') b2 U' R D' R' D R' U b2
 ★ R' U B' U (R U R') D' R U2 R' U' u R F
 ★ R F2 R2 U B' (U R U' R') U' B R2 F2 R'
 ★ R F' (U R' U' R) F (R U' R) y U' F' U F' U F2
 ★ F2 R2 F U2 R F (R' U R) F' R' U F' R2 F2
 ★ R r F2 R2 r U' R F2 R' U R' U2 M2
 (R' U R) U F2 R' F U' F' R F U R' U2 R U' F



★★★ B' U' (R' U R U') (R U R') y R F U' (R U R' U') F'
 ★ R' F2 U R U2 r' F' M' U2 R' F2 R2
 ★ R' U' F (R' U R U') F' R2 U' R2 U' R2 U' R'
 ★ R2 F' R (U R U' R') F' R U2 R' U2 R' F2 R2
 ★ F' R' U F' U' F' R' F R2 U R2 F (R U' R) F
 ★ R' F' R F' U' L' U F R' F' L F2 R
 ★ (R U R') B2 (R U' R) D' R2 U R2 u F2 R2
 F U F' r2 U' F D' F' D F' U r2
 R' r2 U' R F2 R' U R' U R2 F2 R2 U' M2
 R2 F2 M2 u R2 U' M2 F2 u R2 U' R2
 R' F' U F U2 R' D' F U' F' U F' u F2
 R2 U R U R2 U2 B' R' B U F R' F' U R'
 R' F' R B' R' F' R B U' r' F M' F2 R
 F' U R' U F U F' u' R U2 R' E' R F

★★★ R F' R2 F' (R U R') U2 (R U R' U) F R2 F R'
 ★ R' U' R F' U2 F R U R F R2 F' R U' R'
 ★ R U2 R' U2 R' F' U2 R (U R U' R') U F (R' U R)
 ★ R2 F2 R2 U2 (R U' R) F2 R' U' M' U2 r'
 ★ R U2 R' U (R U R') F' R' U2 R U2 F (U' R' U R)
 ★ F U F' R2 F U' F U' R2 U R2 U F2 R2
 ★ (R' U R) F R2 U R' F' U F U (R' U R) U R2 F'
 ★ F (R U R' U') F' R' U' F U2 F2 U' F2 U' F' R
 ★ F' U F U' R' U' R F' R' U' R U2 F (U' R' U R)
 ★ F U' B U2 F' U B' R' r' F2 R r
 ★ R' U' R F' U2 F R' U R' F' (R' U R) F R' U2 R'
 R U B' R' B U' R' U2 R' U' R U F R2 F'
 R U2 R' U B' R' U' R U R B U R' (U' R' U R)
 F' R L2 U R' U' B' (U R U' R') B L2 F