# PLL Algorithms (Permutation of Last Layer)

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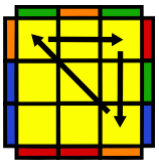
and Andy Klise

## Algorithm Presentation Format



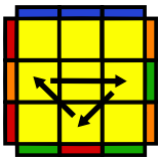
**Suggested algorithm here**
Alternative algorithms here
**PLL Case Name** - Probability = 1/x

Round brackets are used to segment algorithms to assist memorisation and group move triggers.

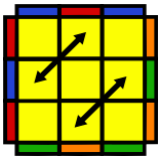
Moves in square brackets at the end of algorithms denote a U face adjustment necessary to complete the cube from the states specified.

It is recommended to learn the algorithms in the order presented.

## Permutations of Edges Only

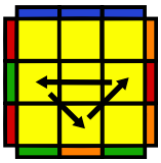


**R2 U (R U R' U') R' U' (R' U R')**
y2 (R' U R' U') R' U' (R' U R U) R2'
**Ub** - Probability = 1/18

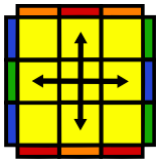


**(M2' U M2' U) (M' U2) (M2' U2 M') [U2]**
y' M' U (M2' U M2') U (M' U2 M2) [U']
**Z** - Probability = 1/36

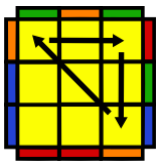
**(R U' R U) R U (R U' R' U') R2**
y2 (R U R' U) (R' U' R2 U') R' U R' U R [U2]
y2 (R2 U' R' U') R U R U (R U' R)
**Ua** - Probability = 1/18



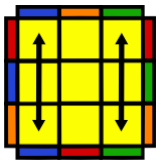
**(M2' U M2') U2 (M2' U M2')**
**H** - Probability = 1/72



## Permutations of Corners Only

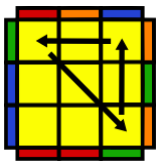


**x (R' U R') D2 (R U' R') D2 R2 x'**
y x' R2 D2 (R' U' R) D2 (R' U R') x
**Aa** - Probability = 1/18

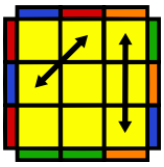


**x' (R U' R' D) (R U R' D') (R U R' D) (R U' R' D') x**
**E** - Probability = 1/36

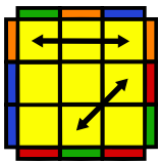
**x R2' D2 (R U R') D2 (R U' R) x'**
y x' (R U' R) D2 (R' U R) D2 R2' x
**Ab** - Probability = 1/18



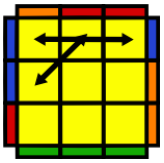
## Swap One Set of Adjacent Corners



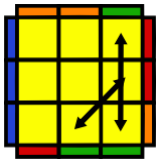
**(R U' R' U') (R U R D) (R' U' R D') (R' U2 R') [U']**
y' (L U2 L' U2) L F' (L' U' L U) L F L2' [U]
(R U R' F') (R U2' R' U2') (R' F R U) (R U2' R') [U']
**Ra** - Probability = 1/18



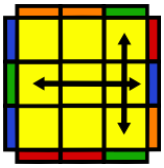
**(R' U2 R U2') R' F (R U R' U') R' F' R2 [U']**
(R' U2 R' D') (R U' R' D) (R U R U') (R' U' R) [U']
**Rb** - Probability = 1/18



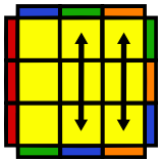
**(R' U L' U2) (R U' R' U2 R) L [U']**
y' (L' U' L F) (L' U' L U) L F' L2' U L [U]
**Ja** - Probability = 1/18



**(R U R' F') (R U R' U') R' F R2 U' R' [U']**
**Jb** - Probability = 1/18

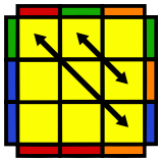


**(R U R' U') (R' F R2 U') R' U' (R U R' F')**
**T** - Probability = 1/18

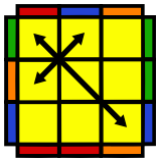


**(R' U' F')(R U R' U')(R' F R2 U')(R' U' R U)(R' U R)**
y (R' U2 R' U') y (R' F' R2 U') (R' U R' F) R U' F
**F** - Probability = 1/18

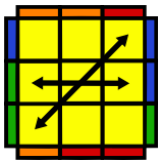
## Swap One Set of Diagonal Corners



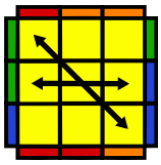
**(R' U R' U') y (R' F' R2 U') (R' U R' F) R F**
**V** - Probability = 1/18



**F (R U' R' U') (R U R' F') (R U R' U') (R' F R F')**
**Y** - Probability = 1/18



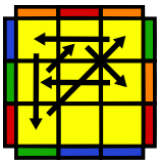
**(RUR'U)(RUR'F')(RUR'U')(R'FR2U') R' U2 (RU'R')**
z (U R' D) (R2 U' R D') (U R' D) (R2 U' R D') [R'] z'
**Na** - Probability = 1/72



**(R' U R U') (R' F' U' F) (R U R' F) R' F' (R U' R)**
(R' U L' U2 R U' L) (R' U L' U2 R U' L) [U]
**Nb** - Probability = 1/72

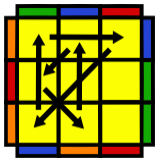
## G Permutations (Double cycles)

**R2 U (R' U R' U') (R U' R2) D U' (R' U R D') [U]**
R2 u (R' U R' U') R u' R2 y' (R' U R)
**Ga** - Probability = 1/18



**(F' U' F) (R2 u R' U) (R U' R u') R2'**
y' R' U' y F (R2 u R' U) (R U' R u') R2'
y' D (R' U' R U) D' (R2 U R' U) (R U' R U') R2' [U']
**Gb** - Probability = 1/18

**R2 U' (R U' R U) (R' U R2 D') (U R U' R') D [U']**
y2 R2' F2 (R U2' R U2') R' F (R U R' U') R' F R2
**Gc** - Probability = 1/18



**D' (R U R' U') D (R2 U' R U') (R' U R' U) R2 [U]**
(R U R') y' (R2 u' R U') (R' U R' u) R2
**Gd** - Probability = 1/18