

# SQUARE -1 ALGORITHM SHEET

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## About the Notation:

A corner is worth 2, an edge 1, these values can be added together to represent a turn.

The first number in the set signifies a turn on the top layer, the second number the bottom layer.

clockwise and counterclockwise moves are noted by nothing and a minus (-) sign.

Each set of moves is separated by a backslash (/) meaning a slice.

## Algorithm to turn shape into cube:

(after cube is in proper position)

/-2,-4 / -1,-2 / -3,-3 /

## Orienting the Edges

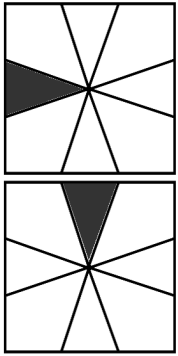
7 cases, 2 algorithms

### Algorithm A

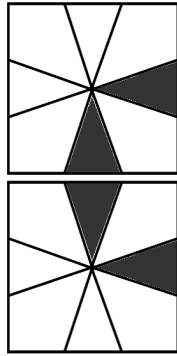
1,0 / -1,-1 / 0,1

### Algorithm B

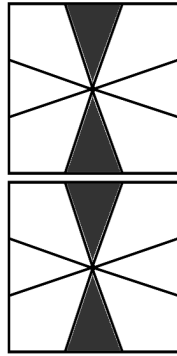
/ 3,0 / -3,-3 / 0,3 /



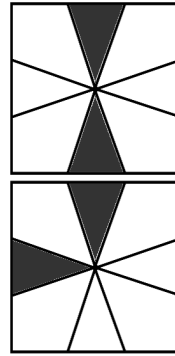
A B -3,0 B A



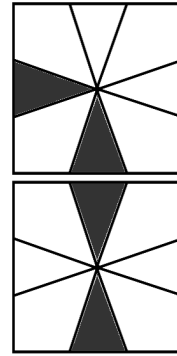
B A



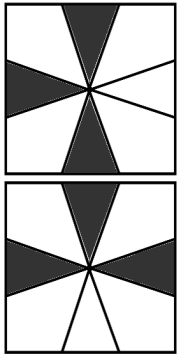
A



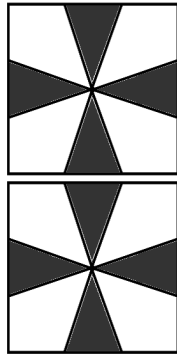
B 0,3 B A



B -3,0 B A



A B 6,-3 B A



A 3,3 A

To Align  
Middle Layer:

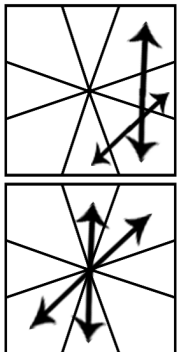
/ 6,0 / 6,0 /

To Switch  
Layers' Positions:

/ 6, 6 /

## Permutation Algorithm

To move only top pieces, perform twice (move the top layer between the sequence) to keep bottom layer undisturbed. Referred to as P below.



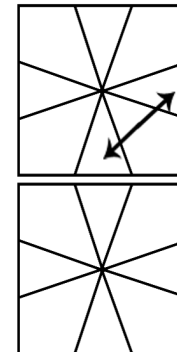
clockwise edge cycle: P 1,0 P

counterclockwise edge cycle: 1,0 P -1,0

clockwise corner cycle: P 2,0 P

counterclockwise corner cycle: P -2,0 P

## Parity



/ 0,-3 / 0,3 / 0,-3 / 0,3 /

/ -3,0 / 0,3 / 0,-3 / 0,3 / 2,0 / 0,2 / -2,0 / 4,0 / 0,-2 / 0,2 / -1,4 / 0,-3 / 0,3