

How to use programs counting fixed points in D_n under given permutation of input variables

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Programs use the external library JavaEWAH ([GitHub](#)) to work with downsets. Programs also use common helper classes: `Cycle.java` and `Poset.java` written by me.

1 Algorithm 1

1.1 Without printing MBFs

Compile file `Alg1a.java` using command `javac Alg1a.java`. To run compiled program use command `java Alg1a` with elements of cycle type as parameters. For example, if you want to find number of fixed points of D_4 under permutation $\pi = (x_1 x_2)(x_3 x_4)$ use command `java Alg1a 2 2`.

1.2 With printing MBFs in the form of bitmaps

Compile file `Alg1b.java` using command `javac Alg1b.java`. To run compiled program use command `java Alg1b` with elements of cycle type as parameters. For example, if you want to find the number of fixed points of D_4 under permutation $\pi = (x_1 x_2)(x_3 x_4)$ with consideration of printing MBFs, use command `java Alg1b 2 2`

2 Algorithm 2

2.1 Without printing MBFs

Compile file `Alg2a.java` using command `javac Alg2a.java`. To run compiled program use command `java Alg2a` with elements of cycle type as parameters. For example, if you want to find number of fixed points of D_5 under permutation $\pi = (x_1 x_2)(x_3 x_4)$ use command `java Alg2a 2 2`

2.2 With printing MBFs in the form of bitmaps

Compile file `Alg2b.java` using command `javac Alg2b.java`. To run compiled program use command `java Alg2b` with elements of cycle type as parameters. For example, if you want to find the number of fixed points of D_5 under permutation $\pi = (x_1 x_2)(x_3 x_4)$ with consideration of printing MBFs, use command `java Alg2b 2 2`

3 Algorithm 3

Compile file `Alg3.java` using command `javac Alg3.java`. To run compiled program use command `java Alg3`. Result is number of fixed points of D_8 under permutation $\pi = (x_1\ x_2)(x_3\ x_4)(x_5\ x_6)(x_7\ x_8)$.