## ${\bf Free Products Comparison Magma}$

September 4, 2018

**Group**:  $C_2 * C_3$ 

Searching up to index: 2500

How many normal groups are found : 527

Total Time in s:446.5

Function	$Count\_GAP$	Count_MAGMA	$Time\_GAP$	${ m Time\_MAGMA}$
LowIndexNormal	1	1	446.5	416.89999999999998
FindPQuotients	247	247	397.2	155.
FindTQuotients	1	1	19.6	0.5999999999999998
FindIntersections	246	246	29.6	261.300000000000001
AddGroup	724	604	347.8	368.800000000000001

**Group**:  $C_2 * C_4$ 

Searching up to index: 500

How many normal groups are found : 688

Total Time in s: 201.7

Function	$Count\_GAP$	$\operatorname{Count}_{-}\operatorname{MAGMA}$	$\operatorname{Time\_GAP}$	${ m Time\_MAGMA}$
LowIndexNormal	1	1	201.7	157.800000000000001
FindPQuotients	305	305	186.6	90.7000000000000003
FindTQuotients	1	1	0.2	0.200000000000000001
FindIntersections	304	304	14.7	66.9000000000000006
AddGroup	903	852	166.5	102.

**Group**:  $C_2 * C_5$ 

Searching up to index : 2000

How many normal groups are found : 205

Total Time in s: 186.3

Function	$Count\_GAP$	$Count\_MAGMA$	${ m Time\_GAP}$	$Time\_MAGMA$
LowIndexNormal	1	1	186.3	33.
FindPQuotients	88	88	175.0	30.19999999999999
FindTQuotients	1	1	6.7	0.2999999999999999
FindIntersections	87	87	4.4	2.399999999999999
AddGroup	344	225	124.2	6.5

**Group**:  $C_2 * C_6$ 

Searching up to index: 500

How many normal groups are found : 862

Total Time in s: 370.8

Function	$Count\_GAP$	$\operatorname{Count}_{-}\operatorname{MAGMA}$	${ m Time\_GAP}$	${ m Time\_MAGMA}$
LowIndexNormal	1	1	370.8	188.90000000000001
FindPQuotients	363	363	348.5	108.40000000000001
FindTQuotients	1	1	0.7	0.200000000000000001
FindIntersections	362	362	21.5	80.29999999999997
AddGroup	1145	1077	324.2	118.

Group:  $C_2 * C_7$ 

Searching up to index : 1000

How many normal groups are found: 63

Total Time in s: 17.8

Function	$Count\_GAP$	$Count\_MAGMA$	$Time\_GAP$	$\operatorname{Time\_MAGMA}$
LowIndexNormal	1	1	17.8	6.40000000000000004
FindPQuotients	26	26	17.1	6.099999999999996
FindTQuotients	1	1	0.6	0.200000000000000001

FindIntersections	25	25	0.0	0.100000000000000001
AddGroup	79	69	9.6	0.5

**Group**:  $C_2 * C_8$ 

Searching up to index : 500

How many normal groups are found: 1187

Total Time in s: 1199.8

Function	$Count\_GAP$	$Count\_MAGMA$	$Time\_GAP$	$Time\_MAGMA$
LowIndexNormal	1	1	1199.8	365.
FindPQuotients	466	466	1154.7	231.69999999999999
FindTQuotients	1	1	1.0	0.200000000000000001
FindIntersections	465	465	44.1	133.09999999999999
AddGroup	1761	1688	1067.1	240.1999999999999

**Group**:  $C_2 * C_9$ 

Searching up to index : 1000

How many normal groups are found: 358

Total Time in s: 169.2

Function	$Count\_GAP$	$Count\_MAGMA$	$Time\_GAP$	$Time\_MAGMA$
LowIndexNormal	1	1	169.2	61.39999999999999
FindPQuotients	184	184	152.4	48.29999999999997
FindTQuotients	1	1	5.5	0.2999999999999999
FindIntersections	183	183	11.2	12.9
AddGroup	490	445	125.4	23.8000000000000001

**Group** :  $C_2 * C_{10}$ 

Searching up to index: 500

How many normal groups are found : 469

Total Time in s: 86.6

Function	$Count\_GAP$	Count_MAGMA	$Time\_GAP$	$Time\_MAGMA$
LowIndexNormal	1	1	86.6	87.09999999999994
FindPQuotients	227	227	78.9	49.5
FindTQuotients	1	1	0.1	0.200000000000000001
FindIntersections	226	226	7.4	37.39999999999999
AddGroup	567	551	62.9	51.89999999999999

**Group**:  $C_2 * C_{11}$ 

Searching up to index : 1000

How many normal groups are found : 21

Total Time in s : 10.7

Function	$Count\_GAP$	$Count\_MAGMA$	$Time\_GAP$	${ m Time\_MAGMA}$
LowIndexNormal	1	1	10.7	1.5
FindPQuotients	6	6	2.3	1.3
FindTQuotients	1	1	8.4	0.200000000000000001
FindIntersections	5	5	0.0	0.
AddGroup	28	21	1.1	0.

**Group** :  $C_2 * C_{12}$ 

Searching up to index: 150

How many normal groups are found: 355

Total Time in s: 48.2

Function	$Count\_GAP$	Count_MAGMA	$Time\_GAP$	$\operatorname{Time\_MAGMA}$
LowIndexNormal	1	1	48.2	37.799999999999997
FindPQuotients	152	152	42.0	34.2000000000000003
FindTQuotients	1	1	0.0	0.200000000000000001
FindIntersections	151	151	6.1	3.399999999999999
AddGroup	476	473	39.9	6.