

# FreeProductsExtendedProfile

August 5, 2018

**Group :**  $C_2 * C_3$

Searching up to index : 2500

How many normal groups are found : 527

Total Time in s : 789.2

Function	Count	AbsT/s	ChildT/s	AbsS/gb	ChildS/gb
NextPrimeInt	1706	0.0	0.0	0.0	0.0
GModuleByMats	35274	0.8	0.0	0.1	0.0
GroupHomomorphismByImagesNC	5720	0.9	0.0	0.0	0.0
Index	509862	1.4	0.0	0.1	0.0
NaturalHomomorphismBySubspace	863	1.4	0.0	0.0	0.0
GeneratorsOfMagmaWithInverses	2383630	2.0	0.2	0.0	0.0
EpimorphismQuotientSystem	1706	2.0	0.3	0.3	0.0
PQuotient	3412	5.1	0.0	0.4	0.0
Intersection	367184	7.2	0.2	1.1	0.0
LowIndexSubgroupsFpGroup	2	7.8	0.0	1.4	0.0
Core	5032	9.6	7.0	1.7	1.1
ExponentSum	313377	11.9	0.0	0.8	0.0
FindIntersections	526	12.6	12.3	3.9	3.9
PreImagesRepresentative	189576	16.2	0.1	1.0	0.0
FindTQuotients	1	18.4	18.4	3.3	3.3
Image	477934	26.8	0.1	5.7	0.0
PullBackH	863	32.8	6.7	3.5	0.5
IsomorphismFpGroup	1095	38.8	0.3	3.8	0.0
PreImage	11316	67.4	1.0	25.4	0.0
Kernel	863	67.6	67.4	25.4	25.4
SMTX_BasesMaximalSubmodules	994	76.9	0.2	14.3	0.0

IsSubgroup	11757	490.0	0.7	245.2	0.0
AddGroup	1059	491.3	490.5	245.3	245.2
FindPQuotients	527	758.0	752.6	297.2	296.7
LowIndexNormal	1	789.2	789.2	304.4	304.4

**Group :**  $C_2 * C_4$

Searching up to index : 500

How many normal groups are found : 688

Total Time in s : 318.5

Function	Count	AbsT/s	ChildT/s	AbsS/gb	ChildS/gb
NextPrimeInt	1182	0.0	0.0	0.0	0.0
LowIndexSubgroupsFpGroup	2	0.0	0.0	0.0	0.0
Core	199	0.1	0.0	0.0	0.0
FindTQuotients	1	0.2	0.2	0.0	0.0
GModuleByMats	22388	0.4	0.0	0.0	0.0
GroupHomomorphismByImagesNC	7311	0.6	0.0	0.0	0.0
Intersection	459746	0.6	0.0	0.0	0.0
NaturalHomomorphismBySubspace	1362	0.8	0.0	0.0	0.0
EpimorphismQuotientSystem	1182	1.0	0.2	0.1	0.0
Index	892293	1.4	0.0	0.0	0.0
GeneratorsOfMagmaWithInverses	2266215	1.8	0.1	0.0	0.0
PQuotient	2364	3.9	0.0	0.5	0.0
ExponentSum	210644	4.1	0.0	0.3	0.0
PreImagesRepresentative	114726	6.1	0.0	0.5	0.0
FindIntersections	687	11.6	11.0	3.2	3.1
Image	325344	12.3	0.1	2.1	0.0
PullBackH	1362	14.3	2.5	1.6	0.2
IsomorphismFpGroup	1377	20.0	0.2	2.7	0.0
SMTX_BasesMaximalSubmodules	955	31.8	0.1	6.7	0.0
PreImage	2940	34.3	1.0	6.2	0.1
Kernel	1362	34.5	34.3	6.3	6.2
IsSubgroup	24618	185.1	1.2	81.8	0.0
AddGroup	1522	187.2	185.8	81.9	81.8
FindPQuotients	688	306.6	303.7	99.9	99.7
LowIndexNormal	1	318.5	318.5	103.2	103.2

**Group :**  $C_2 * C_5$

Searching up to index : 2000

How many normal groups are found : 205

Total Time in s : 830.3

Function	Count	AbsT/s	ChildT/s	AbsS/gb	ChildS/gb
NextPrimeInt	894	0.0	0.0	0.0	0.0
GroupHomomorphismByImagesNC	2018	0.2	0.0	0.0	0.0
FindIntersections	204	0.2	0.2	0.0	0.0
GModuleByMats	18408	0.4	0.0	0.0	0.0
Index	295114	0.7	0.0	0.0	0.0
GeneratorsOfMagmaWithInverses	992507	0.8	0.0	0.0	0.0
NaturalHomomorphismBySubspace	231	0.9	0.0	0.0	0.0
EpimorphismQuotientSystem	894	1.0	0.1	0.1	0.0
LowIndexSubgroupsFpGroup	2	1.5	0.0	0.2	0.0
PQuotient	1788	2.4	0.0	0.2	0.0
Intersection	84342	2.5	0.1	0.3	0.0
Core	3194	3.4	2.5	0.5	0.3
FindTQuotients	1	6.7	6.7	1.1	1.1
ExponentSum	133540	7.1	0.0	0.5	0.0
PreImagesRepresentative	97152	10.7	0.0	0.6	0.0
Image	233056	14.9	0.0	1.0	0.0
PreImage	4566	15.3	0.2	3.4	0.0
Kernel	231	15.3	15.3	3.4	3.4
PullBackH	231	20.0	3.7	2.5	0.2
IsomorphismFpGroup	411	28.4	0.1	2.2	0.0
IsSubgroup	5801	154.0	0.2	64.6	0.0
AddGroup	369	154.1	154.0	64.6	64.6
SMTX_BasesMaximalSubmodules	349	483.6	0.1	33.3	0.0
FindPQuotients	205	823.2	734.1	123.7	108.3
LowIndexNormal	1	830.3	830.3	124.9	124.9

**Group :**  $C_2 * C_6$

Searching up to index : 500

How many normal groups are found : 862

Total Time in s : 578.9

Function	Count	AbsT/s	ChildT/s	AbsS/gb	ChildS/gb
NextPrimeInt	1344	0.0	0.0	0.0	0.0
LowIndexSubgroupsFpGroup	2	0.0	0.0	0.0	0.0
Core	400	0.2	0.1	0.0	0.0
GModuleByMats	31790	0.5	0.0	0.0	0.0
Intersection	728852	1.1	0.0	0.0	0.0
FindTQuotients	1	1.2	1.2	0.1	0.1
NaturalHomomorphismBySubspace	1665	1.3	0.0	0.0	0.0
GroupHomomorphismByImagesNC	8857	1.3	0.0	0.0	0.0
EpimorphismQuotientSystem	1344	1.3	0.2	0.1	0.0
Index	1387175	2.3	0.0	0.1	0.0
GeneratorsOfMagmaWithInverses	3857206	3.4	0.4	0.0	0.0
ExponentSum	278083	5.6	0.0	0.4	0.0
PQuotient	2688	6.7	0.0	1.1	0.0
PreImagesRepresentative	135018	7.3	0.0	0.5	0.0
Image	399046	15.0	0.1	1.6	0.0
PullBackH	1665	20.2	3.6	1.9	0.3
FindIntersections	861	26.7	25.7	6.2	6.2
IsomorphismFpGroup	1725	31.9	0.6	3.4	0.0
SMTX_BasesMaximalSubmodules	1090	40.1	0.1	4.8	0.0
PreImage	3742	41.0	1.6	7.1	0.1
Kernel	1665	41.4	41.0	7.2	7.1
IsSubgroup	45619	397.6	2.3	148.1	0.0
AddGroup	1896	401.3	398.8	148.3	148.1
FindPQuotients	862	550.9	543.6	164.2	163.3
LowIndexNormal	1	578.9	578.9	170.6	170.6

**Group :**  $C_2 * C_7$

Searching up to index : 1000

How many normal groups are found : 63

Total Time in s : 27.6

Function	Count	AbsT/s	ChildT/s	AbsS/gb	ChildS/gb
NextPrimeInt	385	0.0	0.0	0.0	0.0

FindIntersections	62	0.0	0.0	0.0	0.0
GModuleByMats	2754	0.0	0.0	0.0	0.0
GroupHomomorphismByImagesNC	679	0.0	0.0	0.0	0.0
NaturalHomomorphismBySubspace	59	0.0	0.0	0.0	0.0
Index	10756	0.0	0.0	0.0	0.0
GeneratorsOfMagmaWithInverses	142352	0.1	0.0	0.0	0.0
LowIndexSubgroupsFpGroup	2	0.1	0.0	0.0	0.0
EpimorphismQuotientSystem	385	0.2	0.0	0.0	0.0
Intersection	9180	0.3	0.0	0.0	0.0
Core	518	0.5	0.3	0.0	0.0
ExponentSum	19748	0.6	0.0	0.0	0.0
FindTQuotients	1	0.8	0.8	0.1	0.1
PreImagesRepresentative	13316	0.9	0.0	0.0	0.0
PreImage	634	1.4	0.0	0.2	0.0
Kernel	59	1.4	1.4	0.2	0.2
Image	33366	1.4	0.0	0.1	0.0
PQuotient	770	1.5	0.0	0.1	0.0
PullBackH	59	1.9	0.3	0.2	0.0
IsomorphismFpGroup	127	3.4	0.0	0.2	0.0
SMTX_BasesMaximalSubmodules	92	4.8	0.0	0.5	0.0
IsSubgroup	736	9.6	0.0	4.3	0.0
AddGroup	83	9.6	9.6	4.3	4.3
FindPQuotients	63	26.8	25.6	6.2	6.0
LowIndexNormal	1	27.6	27.6	6.4	6.4

**Group :**  $C_2 * C_8$

Searching up to index : 500

How many normal groups are found : 1187

Total Time in s : 1677.0

Function	Count	AbsT/s	ChildT/s	AbsS/gb	ChildS/gb
NextPrimeInt	1581	0.0	0.0	0.0	0.0
LowIndexSubgroupsFpGroup	2	0.0	0.0	0.0	0.0
Core	415	0.1	0.1	0.0	0.0
FindTQuotients	1	0.7	0.7	0.1	0.1
GModuleByMats	57488	1.1	0.0	0.1	0.0

Intersection	1380292	1.7	0.0	0.1	0.0
EpimorphismQuotientSystem	1581	1.8	0.4	0.2	0.0
GroupHomomorphismByImagesNC	12697	2.2	0.0	0.0	0.0
NaturalHomomorphismBySubspace	2484	2.6	0.0	0.1	0.0
Index	2896550	4.0	0.1	0.2	0.0
PQuotient	3162	5.3	0.0	0.6	0.0
GeneratorsOfMagmaWithInverses	11258633	10.2	1.7	0.0	0.0
ExponentSum	511527	14.2	0.0	1.1	0.0
PreImagesRepresentative	319824	21.6	0.1	1.7	0.0
Image	893476	38.1	0.3	4.4	0.0
PullBackH	2484	50.5	8.7	5.6	0.7
IsomorphismFpGroup	2375	69.1	1.1	5.9	0.0
FindIntersections	1186	71.4	68.8	18.0	18.0
PreImage	5400	93.2	2.3	11.9	0.2
Kernel	2484	93.6	93.2	12.0	11.9
SMTX_BasesMaximalSubmodules	1337	162.2	0.4	18.5	0.0
IsSubgroup	119234	1184.7	7.3	387.1	0.0
AddGroup	2779	1191.6	1187.0	387.5	387.1
FindPQuotients	1187	1604.7	1575.9	423.8	419.5
LowIndexNormal	1	1677.0	1676.9	442.0	442.0

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

Searching up to index : 500

How many normal groups are found : 469

Total Time in s : 177.3

Function	Count	AbsT/s	ChildT/s	AbsS/gb	ChildS/gb
NextPrimeInt	951	0.0	0.0	0.0	0.0
LowIndexSubgroupsFpGroup	2	0.0	0.0	0.0	0.0
Core	188	0.1	0.0	0.0	0.0
FindTQuotients	1	0.2	0.2	0.0	0.0
GModuleByMats	13440	0.2	0.0	0.0	0.0
Intersection	214366	0.3	0.0	0.0	0.0
NaturalHomomorphismBySubspace	877	0.5	0.0	0.0	0.0
GroupHomomorphismByImagesNC	4919	0.5	0.0	0.0	0.0
EpimorphismQuotientSystem	951	0.8	0.1	0.1	0.0

GeneratorsOfMagmaWithInverses	1057492	0.8	0.0	0.0	0.0
Index	384311	0.8	0.0	0.0	0.0
ExponentSum	160569	2.8	0.0	0.2	0.0
FindIntersections	468	3.1	2.8	0.6	0.6
PreImagesRepresentative	68040	4.5	0.0	0.3	0.0
PQuotient	1902	5.2	0.0	1.1	0.0
Image	205952	7.7	0.0	0.8	0.0
PullBackH	877	10.8	1.7	1.0	0.1
SMTX_BasesMaximalSubmodules	718	18.7	0.0	3.1	0.0
IsomorphismFpGroup	939	21.9	0.2	2.5	0.0
PreImage	1946	22.7	0.7	5.1	0.0
Kernel	877	22.8	22.7	5.1	5.1
IsSubgroup	11130	78.2	0.4	34.0	0.0
AddGroup	944	79.2	78.5	34.1	34.0
FindPQuotients	469	173.9	171.3	48.3	48.0
LowIndexNormal	1	177.3	177.3	49.0	49.0

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

Searching up to index : 1000

How many normal groups are found : 21

Total Time in s : 15.2

Function	Count	AbsT/s	ChildT/s	AbsS/gb	ChildS/gb
NextPrimeInt	317	0.0	0.0	0.0	0.0
FindIntersections	20	0.0	0.0	0.0	0.0
GModuleByMats	378	0.0	0.0	0.0	0.0
NaturalHomomorphismBySubspace	17	0.0	0.0	0.0	0.0
GroupHomomorphismByImagesNC	401	0.0	0.0	0.0	0.0
ExponentSum	3602	0.0	0.0	0.0	0.0
PreImagesRepresentative	1980	0.1	0.0	0.0	0.0
PullBackH	17	0.1	0.0	0.0	0.0
Kernel	17	0.1	0.1	0.0	0.0
PreImage	6526	0.1	0.0	0.0	0.0
Index	30108	0.1	0.0	0.0	0.0
Image	5086	0.1	0.0	0.0	0.0
EpimorphismQuotientSystem	317	0.1	0.0	0.0	0.0

GeneratorsOfMagmaWithInverses	607002	0.5	0.0	0.0	0.0
IsomorphismFpGroup	43	0.9	0.0	0.0	0.0
SMTX_BasesMaximalSubmodules	34	0.9	0.0	0.2	0.0
PQuotient	634	1.2	0.0	0.0	0.0
IsSubgroup	188	1.5	0.0	0.5	0.0
AddGroup	29	1.5	1.5	0.5	0.5
LowIndexSubgroupsFpGroup	2	2.0	0.0	0.2	0.0
Intersection	85746	5.3	0.2	0.6	0.0
FindPQuotients	21	5.5	5.4	1.0	1.0
Core	6494	7.4	5.4	1.0	0.6
FindTQuotients	1	9.6	9.6	1.3	1.3
LowIndexNormal	1	15.2	15.2	2.3	2.3

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

Searching up to index : 150

How many normal groups are found : 355

Total Time in s : 77.4

Function	Count	AbsT/s	ChildT/s	AbsS/gb	ChildS/gb
NextPrimeInt	494	0.0	0.0	0.0	0.0
LowIndexSubgroupsFpGroup	2	0.0	0.0	0.0	0.0
Core	22	0.0	0.0	0.0	0.0
FindTQuotients	1	0.0	0.0	0.0	0.0
GModuleByMats	8882	0.1	0.0	0.0	0.0
Intersection	119610	0.2	0.0	0.0	0.0
GroupHomomorphismByImagesNC	3536	0.2	0.0	0.0	0.0
EpimorphismQuotientSystem	494	0.3	0.0	0.0	0.0
NaturalHomomorphismBySubspace	674	0.4	0.0	0.0	0.0
ExponentSum	49960	0.5	0.0	0.0	0.0
Index	241252	0.5	0.0	0.0	0.0
GeneratorsOfMagmaWithInverses	1192743	1.0	0.1	0.0	0.0
PreImagesRepresentative	35168	1.1	0.0	0.0	0.0
PQuotient	988	1.3	0.0	0.1	0.0
PullBackH	674	1.9	0.3	0.1	0.0
Image	98608	2.6	0.0	0.1	0.0
IsomorphismFpGroup	711	4.0	0.0	0.3	0.0



FindIntersections	354	4.8	4.6	1.0	1.0
SMTX_BasesMaximalSubmodules	387	5.0	0.0	0.5	0.0
PreImage	1392	5.7	0.4	0.5	0.0
Kernel	674	5.7	5.7	0.5	0.5
IsSubgroup	18841	52.2	0.7	13.4	0.0
AddGroup	748	52.9	52.4	13.4	13.4
FindPQuotients	355	72.5	71.4	14.5	14.5
LowIndexNormal	1	77.4	77.4	15.6	15.6