GROUPS OF ORDERS 97-100

SUMMARY

order	97	98	99	100
# abelian	1	2	2	4
# other decomposable	0	1	0	6
# other indecomposable	0	2	0	6
TOTAL	**4**	**6**	**6**	**16**

97 = $\langle A^{97} \rangle$

98 = $\langle A^{98} \rangle$ = 49 × 2

98.2 = 14 × 7 = $\langle A^{14}, B^7 \rangle$

98.3 = D_{14} × 7 = $\langle A^7, B^2, C^7, BA = A^{-1}B \rangle$

98.4 = $\langle A^7, B^7, C^2, CA = A^{-1}C, CB = B^{-1}C \rangle$
CLASS EQUATION: 98 = 1 + 2∗24 + 49 **#CC** = 26
ORDER EQUATION: 217∗2 = 2∗49 + 7∗48
NORMAL SUBGROUPS:

H	1	7	7^2	G
G/H	G	D_{14}	2	1

Z = $\mathfrak{N}$ = Φ × 7 **G′** **1**

Sylow subgroups: [**2**] × 49, [7^2] **Maximal subgroups:** [7^2], [D_{14}] × 56

98.5 = D_{98} = $\langle A^{49}, B^2, BA = A^{-1}B \rangle$
CLASS EQUATION: 98 = 1 + 2∗24 + 49 **#CC** = 26
ORDER EQUATION: 1099∗2 = 2∗49 + 7∗6 + 49∗42
NORMAL SUBGROUPS:

H	1	7	49
G/H	G	D_{14}	2

Z = $\mathfrak{N}$ = Φ **G′**

Maximal and Sylow subgroups: [**2**] × 49, [**49**]

99 = $\langle A^{99} \rangle$ = 11 × 9

99.2 = 33 × 3 = ⟨A^{33}, B^3⟩

100 = ⟨A^{100}⟩ = 25 × 4

100.02 = 50 × 2 = ⟨A^{50}, B^2⟩

100.03 = 20 × 5 = ⟨A^{20}, B^5⟩

100.04 = 10^2 = ⟨A^{10}, B^{10}⟩

100.05 = D_{10} × 10 = ⟨A^5, B^2, C^{10}, BA = A^{-1}B⟩

100.06 = 20.4 × 5

100.07 = 20.5 × 5

100.08 = 50.4 × 2

100.09 = ⟨A^2, B^5, C^5, D^2 = A, [B,D] = B^3, [C,D] = C^3⟩
CLASS EQUATION: 100 = 1∗2 + 2∗24 + 25∗2 **#CC** = 28
ORDER EQUATION: 281∗2 = 2 + 4∗50 + 5∗24 + 10∗24
NORMAL SUBGROUPS:

H	**1**	**2**	**5**	**10**	**5^2**	**10 × 5**	**G**
G/H	**G**	**50.4**	**$D_{5,4}$**	**D_{10}**	**4**	**2**	**1**

Z = $\mathfrak{A}$ = Φ × 6 × 6 **G′**

Sylow subgroups: [**4**] × 25, [5^2]
Maximal subgroups: [**10 × 5**], [$D_{5,4}$] × 30

100.10 = D_{50} × 2 = ⟨A^{25}, B^2, C^2, BA = A^{-1}B⟩

100.11 = ⟨A^2, B^5, C^5 = B, D^2 = A, [B,D] = B^3, [C,D] = C^3B^4⟩
CLASS EQUATION: 100 = 1∗2 + 2∗24 + 25∗2 **#CC** = 28
ORDER EQUATION: 881∗2 = 2 + 4∗50 + 5∗4 + 10∗4 + 25∗20 + 50∗20
NORMAL SUBGROUPS:

H	**1**	**2**	**5**	**10**	**25**	**50**	**G**
G/H	**G**	**D_{50}**	**$D_{5,4}$**	**D_{10}**	**4**	**2**	**1**

Z = $\mathfrak{A}$ **Φ** **G′**

Sylow subgroups: [**4**] × 25, [**25**]
Maximal subgroups: [**50**], [$D_{5,4}$] × 5

100.12 = $D_{10} \times D_{10} = \langle A^5, B^2, C^5, D^2, BA = A^{-1}B, DC = C^{-1}D \rangle$

100.13 = $\langle A^5, B^5, C^2, D^2 = C, [A,C] = A^3, [A,D] = A, [B,C] = B^3, [B,D] = B \rangle$

CLASS EQUATION: 100 = 1∗2 + 2∗4 + 4 + 12 + 25∗3 **#CC** = 10

ORDER EQUATION: 185∗2 = 2∗25 + 4∗50 + 5∗24

NORMAL SUBGROUPS:

H	**1**	**5**	5^2	**50.4**	**G**
G/H	**G**	$M_{5,4}^{(2)}$	**4**	**2**	**1**

Z = ℜ = Φ × 6 **G′**

Sylow subgroups: [**4**] × 25, [5^2]

Maximal subgroups: [**50.4**], [$M_{5,4}^{(2)}$] × 30

100.14 = $\langle A^5, B^5, C^2, D^2 = C, [A,C] = A^3, [A,D] = A, [B,C] = B^3, [B,D] = B^2 \rangle$

CLASS EQUATION: 100 = 1 + 4∗6 + 25∗3 **#CC** = 10

ORDER EQUATION: 185∗2 = 2∗25 + 4∗50 + 5∗24

NORMAL SUBGROUPS:

H	**1**	**5**	5^2	**50.4**	**G**
G/H	**G**	$M_{5,4}^{(2)}$	**4**	**2**	**1**

Z = ℜ = Φ × 2 **G′**

Sylow subgroups: [**4**] × 25, [5^2]

Maximal subgroups: [**50.4**], [$M_{5,4}^{(2)}$] × 10

100.15 = $\langle A^5, B^5, C^2, D^2 = C, [A,C] = A^3, [A,D] = A, [B,D] = B^3 \rangle$

CLASS EQUATION: 100 = 1 + 2∗2 + 4∗5 + 5 + 10∗2 + 25∗2 **#CC** = 13

ORDER EQUATION: 265∗2 = 2∗5 + 4∗50 + 5∗24 + 10∗20

NORMAL SUBGROUPS:

H	**1**	**5**	**5**	D_{10}	5^2	$D_{10} \times 5$	**G**
G/H	**G**	$D_{5,4}$	$M_{5,4}^{(2)}$	D_{10}	**4**	**2**	**1**

Z = ℜ = Φ **G′**

Sylow sugroups: [**4**] × 25, [5^2]

Maximal subgroups: [$D_{10} \times 5$], [$M_{5,4}^{(2)}$] × 5, [$D_{5,4}$] × 5

100.16 = $\langle A^5, B^5 = A, C^2, D^2 = C, [A,C] = A^3, [A,D] = A, [B,C] = B^3A^4, [B,D] = BA \rangle$

CLASS EQUATION: 100 = 1 + 4∗6 + 25∗3 **#CC** = 10

ORDER EQUATION: 385∗2 = 2∗25 + 4∗50 + 5∗4 + 25∗20

NORMAL SUBGROUPS:

H	**1**	**5**	**25**	D_{50}	**G**
G/H	**G**	$M_{5,4}^{(2)}$	**4**	**2**	**1**

Z = ℜ **Φ** **G′**

Sylow subgroups: [**4**] × 25, [**25**]

Maximal subgroups: [D_{50}], [**20.5**] × 5