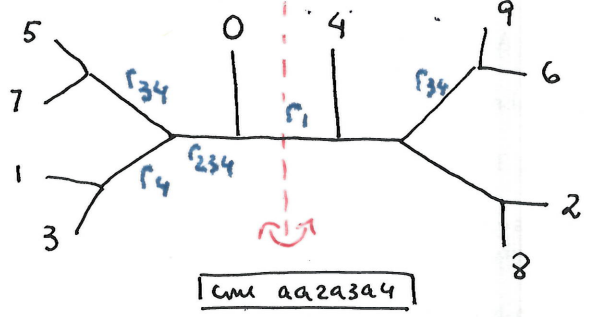


Computation of PL functions for edge lengths & labelling of leaves

$$\Gamma_I = \sum_{i \in I} \Gamma_i$$

Extremal E1:

symmetry of leaf labels & edge lengths

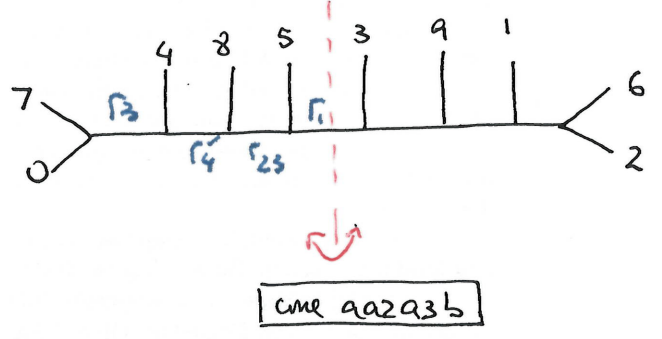
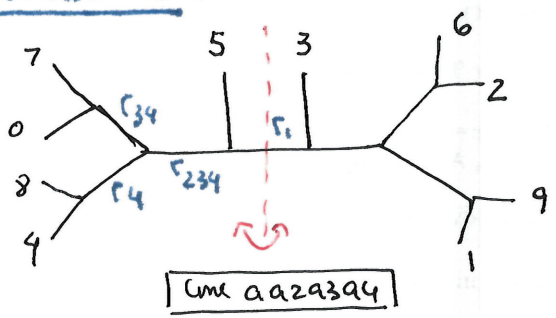


cm a a z a 3 a 4

cm a r z a 3 b

{ 0: G3, 1: G6, 2: F16, 3: F12, 4: F13, 5: G4, 6: F15, 7: G5, 8: G2, 9: F14 }

Extremal E2:

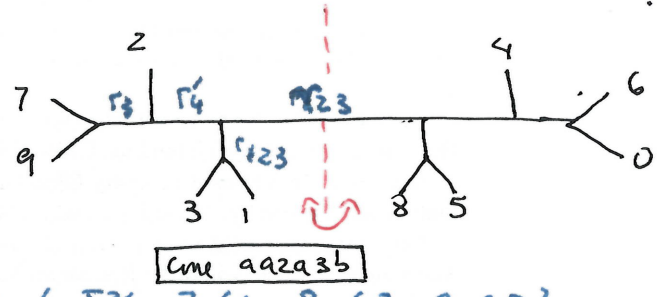
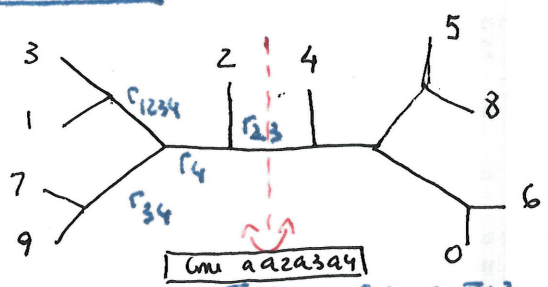


cm a a z a 3 a 4

cm a a z a 3 b

{ 0: G5, 1: F26, 2: F25, 3: F23, 4: G6, 5: G3, 6: F24, 7: G4, 8: F12, 9: G1 }

Extremal E3:

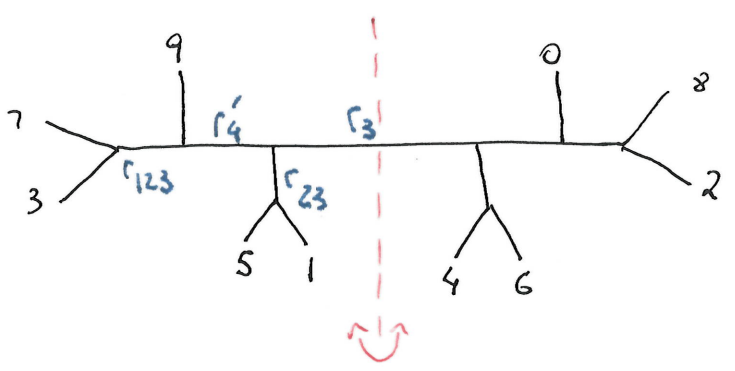
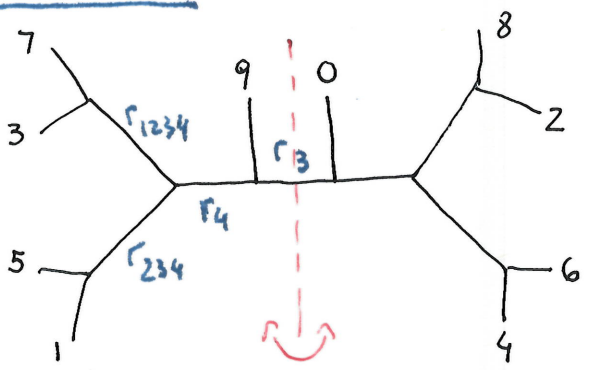


cm a a z a 3 a 4

cm a a z a 3 b

{ 0: F35, 1: F23, 2: G6, 3: F13, 4: F36, 5: G1, 6: F34, 7: G4, 8: G2, 9: G5 }

Extremal E4:

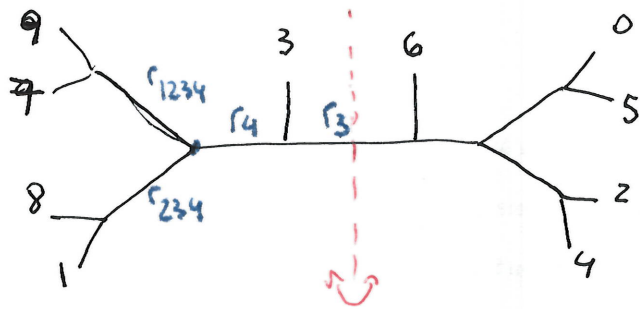


cm a a z a 3 a 4

cm a a z a 3 b

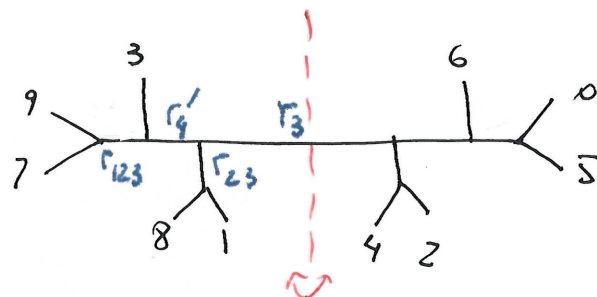
{ 0: G3, 1: F46, 2: G2, 3: F24, 4: F45, 5: G5, 6: G6, 7: F14, 8: G1, 9: F34 }

Extremal E5:



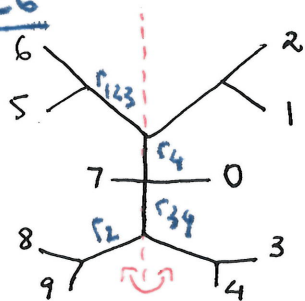
cmr a a z a z a y

{ 0: G2, 1: G4, 2: G6, 3: F35, 4: F45, 5: G1, 6: G3, 7: F15, 8: F56, 9: F25 }



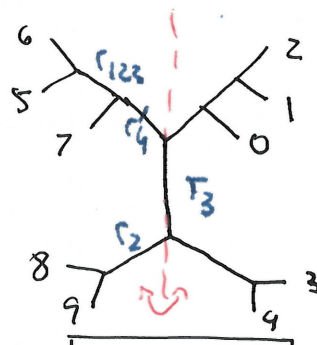
cmr a a z a z b

Extremal E6



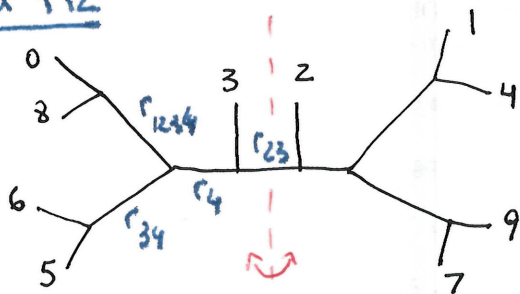
cmr a a z a z a y

{ 0: G3, 1: G2, 2: G1, 3: F56, 4: G4, 5: F26, 6: F16, 7: F36, 8: G5, 9: F46 }



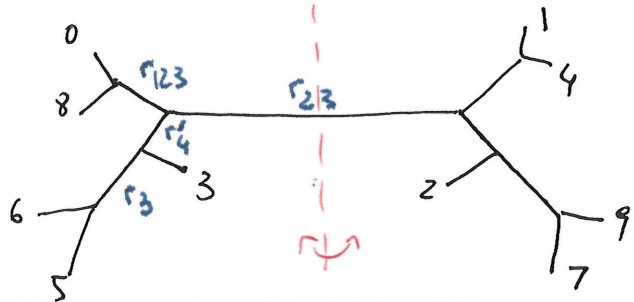
cmr a a z a z b

Extremal F12



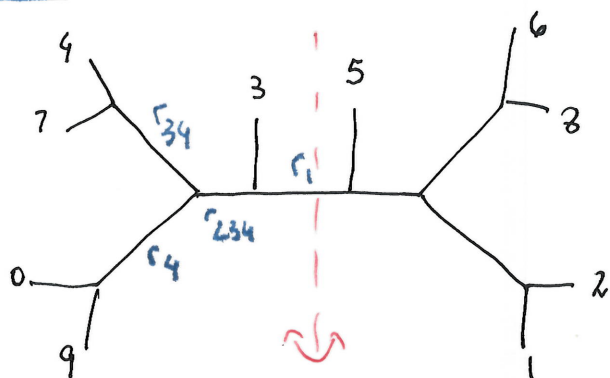
cmr a a z a z a y

{ 0: E1, 1: G2, 2: F36, 3: F45, 4: G1, 5: F56, 6: F96, 7: F34, 8: E2, 9: F35 }



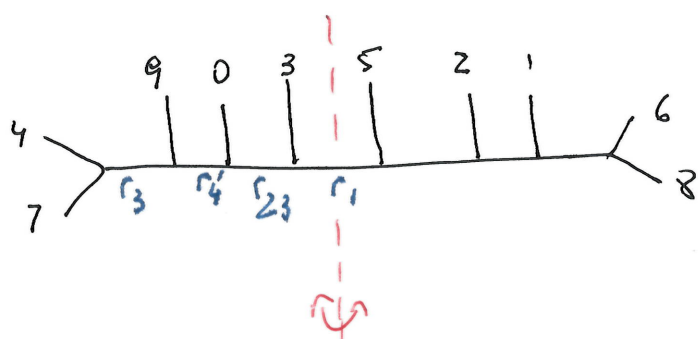
cmr a a z a z b

Extremal F13



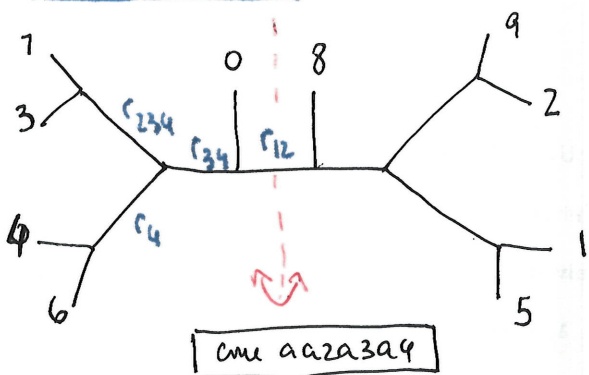
cmr a a z a z a y

{ 0: G1, 1: F45, 2: E3, 3: E1, 4: F24, 5: G3, 6: F56, 7: F25, 8: F46, 9: F26 }



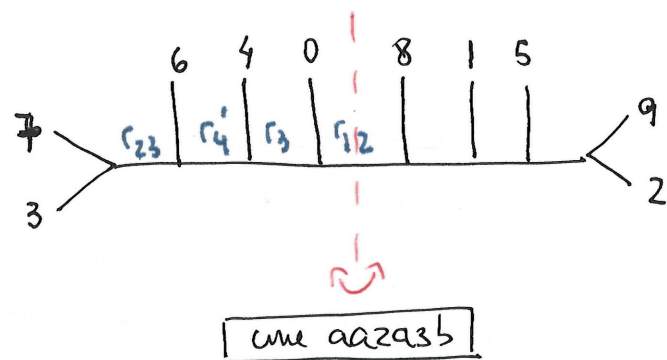
cmr a a z a z b

Extremal F14



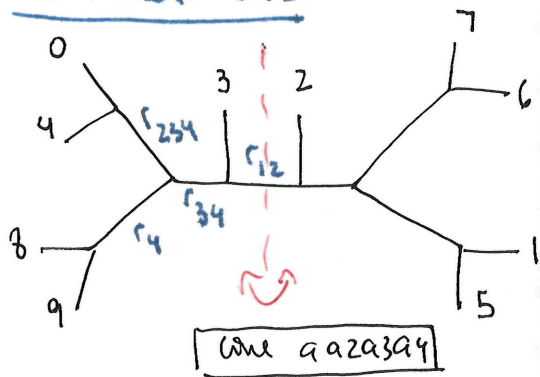
cone aa2a3a4

0: F36, 1: F26, 2: F23, 3: F56, 4: F35, 5: G1, 6: E9, 7: E4, 8: F25, 9: E1



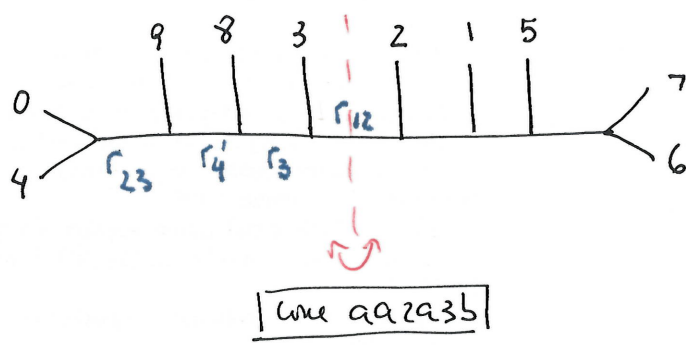
cone aa2a3b

Extremal F15



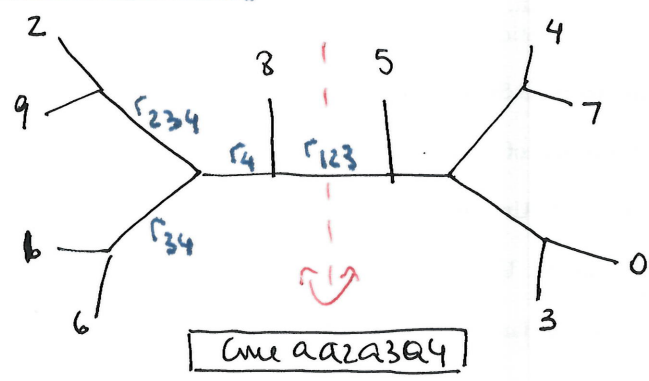
cone aa2a3a4

0: G5, 1: F26, 2: F24, 3: F36, 4: F46, 5: G1, 6: F23, 7: E1, 8: F34, 9: E5



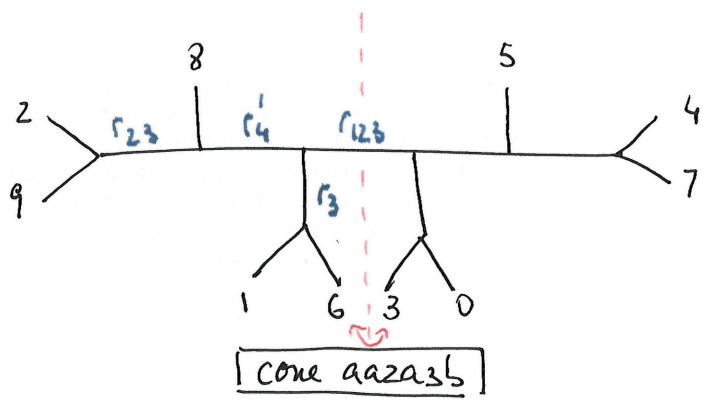
cone aa2a3b

Extremal F16



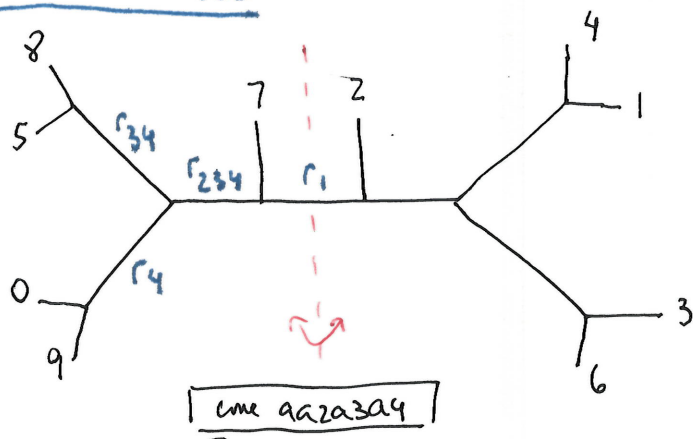
cone aa2a3a4

0: F25, 1: F34, 2: G6, 3: F24, 4: E1, 5: G1, 6: F35, 7: F23, 8: E6, 9: F45



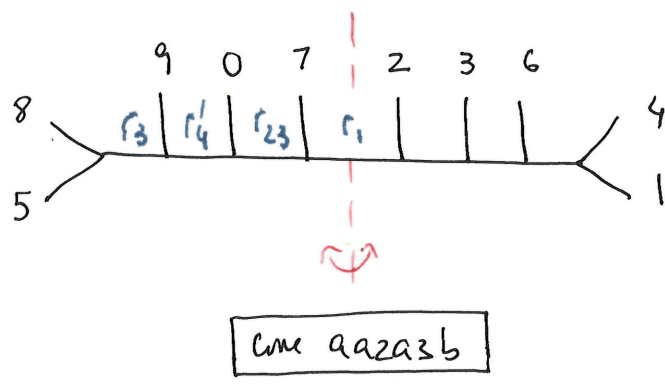
cone aa2a3b

Extremal F23



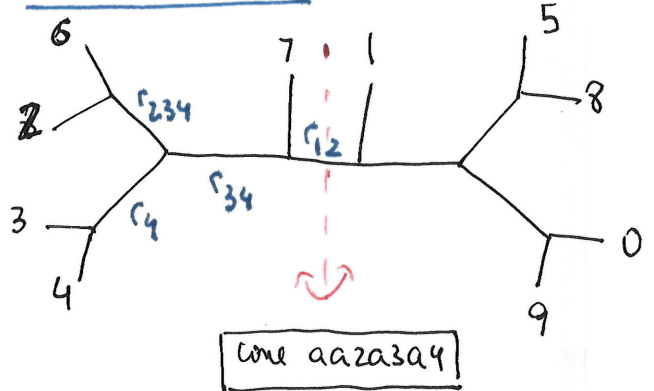
cone aa2a3a4

0: E3, 1: F14, 2: E2, 3: G2, 4: F15, 5: F56, 6: F16, 7: G3, 8: F46, 9: F45



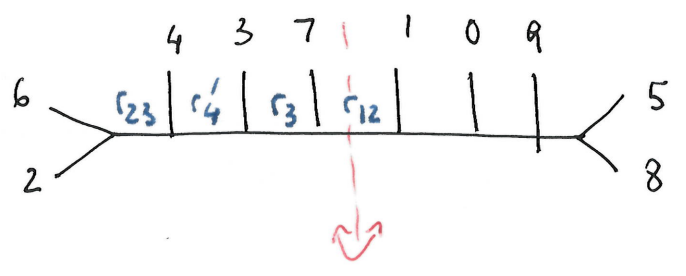
cone aa2a3b

Extremal F24



Cme aaza3a4

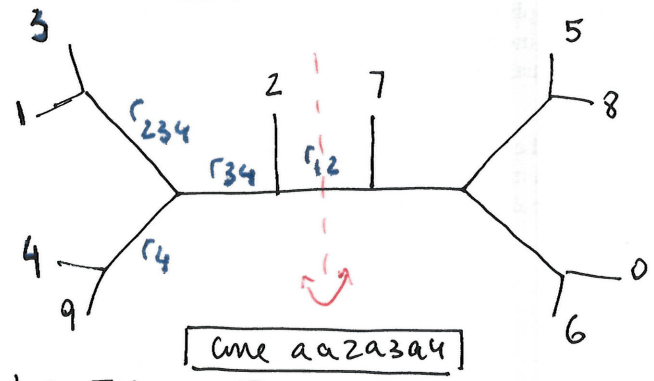
0: F16, 1: F15, 2: F56, 3: F35, 4: E4, 5: G4, 6: G4, 7: F36, 8: F13, 9: G2



Cme aaza3b

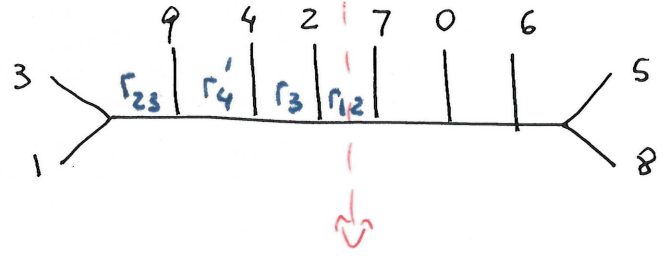
5: E2

Extremal F25



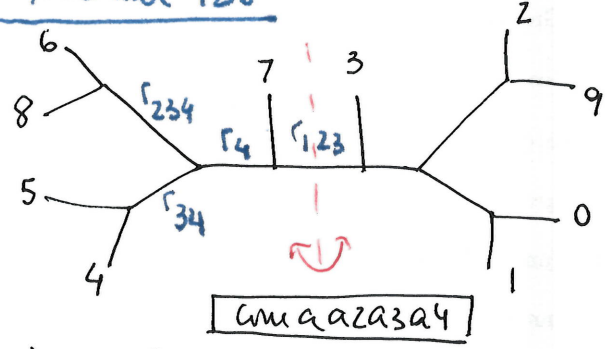
Cme aaza3a4

0: F16, 1: F46, 2: F36, 3: G5, 4: F34, 5: E2, 6: G2, 7: F14, 8: F13, 9: E5



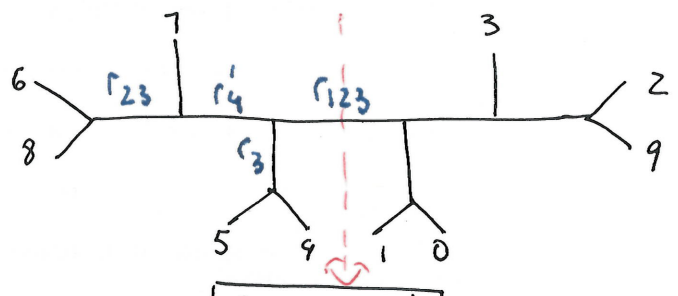
Cme aaza3b

Extremal F26



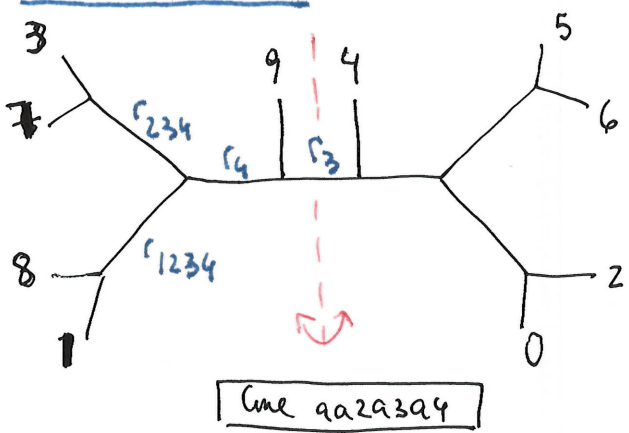
Cme aaza3a4

0: F15, 1: F14, 2: E2, 3: G2, 4: F35, 5: F34, 6: G6, 7: E6, 8: F45, 9: F135



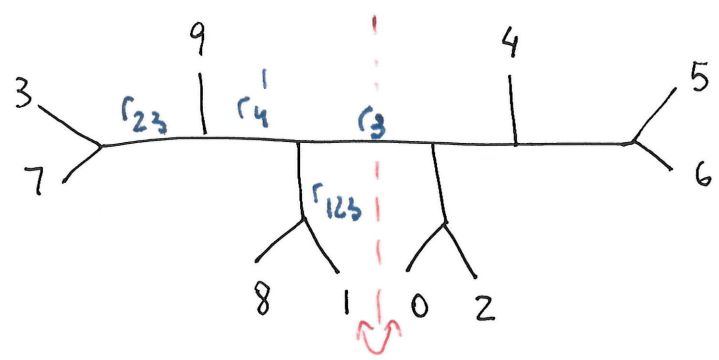
Cme aaza3b

Extremal F34



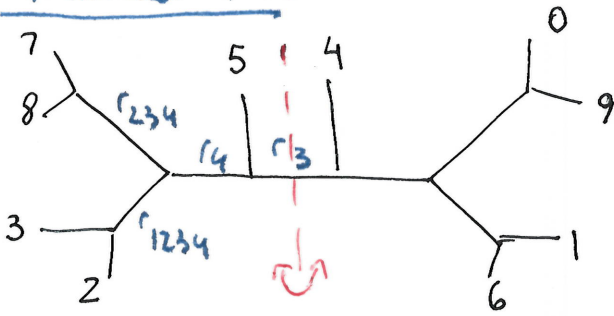
Cme aaza3a4

0: F16, 1: F25, 2: F26, 3: G4, 4: G3, 5: E3, 6: F12, 7: F56, 8: F15, 9: E4



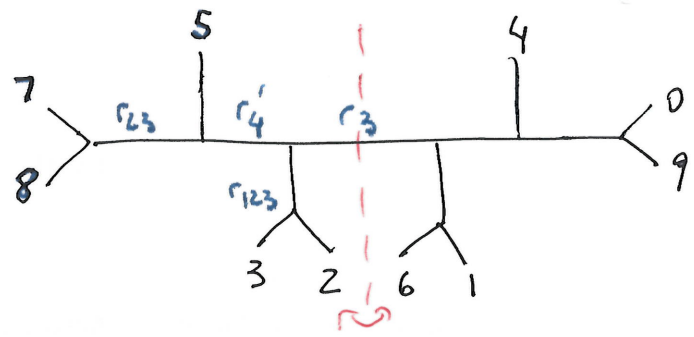
Cme aaza3b

Extremal F35



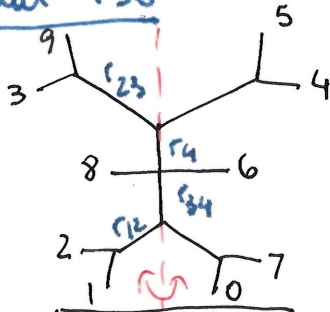
cmc aaza3a4

{0: E3, 1: F26, 2: F24, 3: F14, 4: G3, 5: E5, 6: F16, 7: G5, 8: F46, 9: F12}

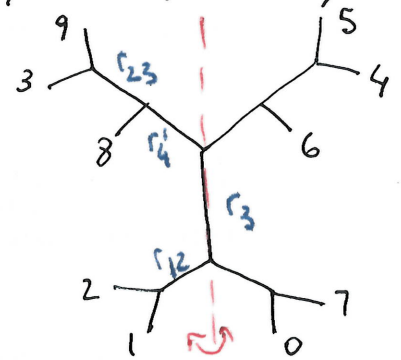


cmc aaza3b

Extremal F36



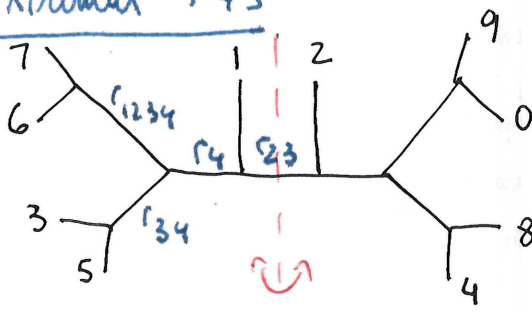
cmc aaza3a4



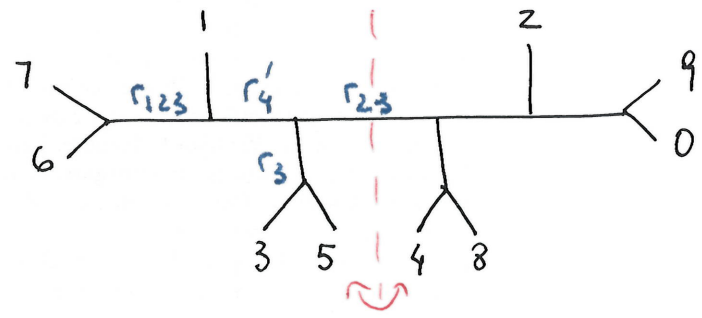
cmc aaza3b

{0: F14, 1: F25, 2: F15, 3: F45, 4: F12, 5: E3, 6: G3, 7: F24, 8: E6, 9: G6}

Extremal F45



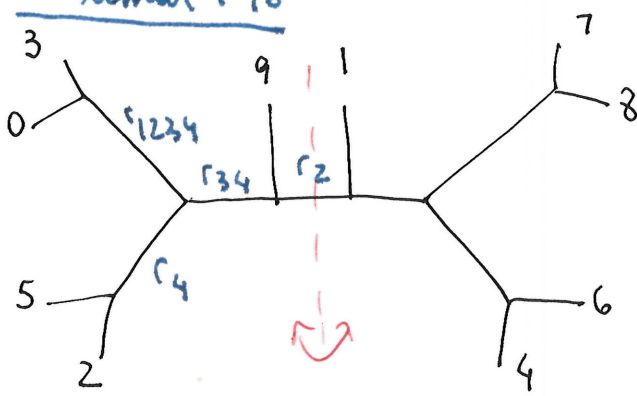
cmc aaza3a4



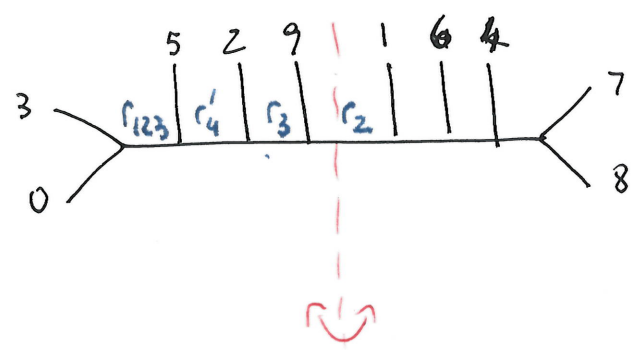
cmc aaza3b

{0: F13, 1: F36, 2: F12, 3: E4, 4: G4, 5: E5, 6: F26, 7: F16, 8: G5, 9: F23}

Extremal F46



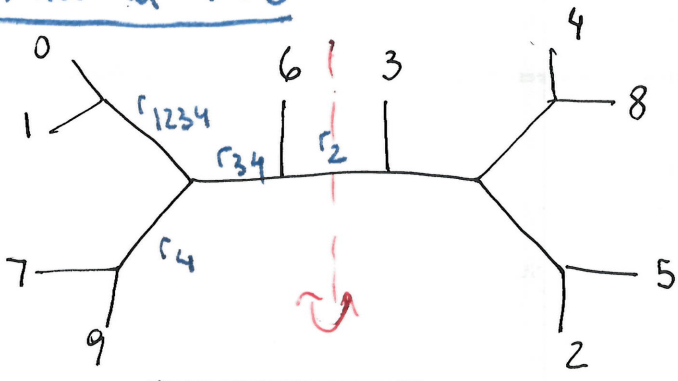
cmc aaza3a4



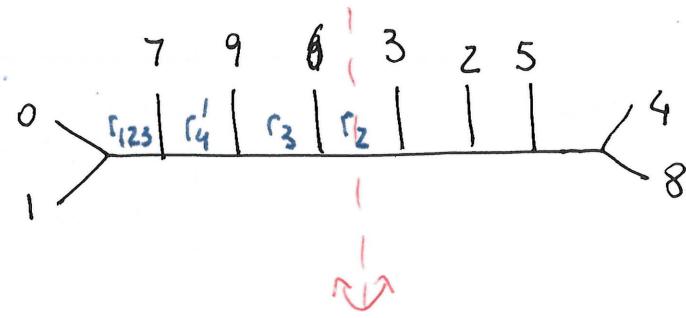
cmc aaza3b

{0: F25, 1: G4, 2: E4, 3: F15, 4: F12, 5: F35, 6: G6, 7: F23, 8: F13, 9: E6}

Extremal F56



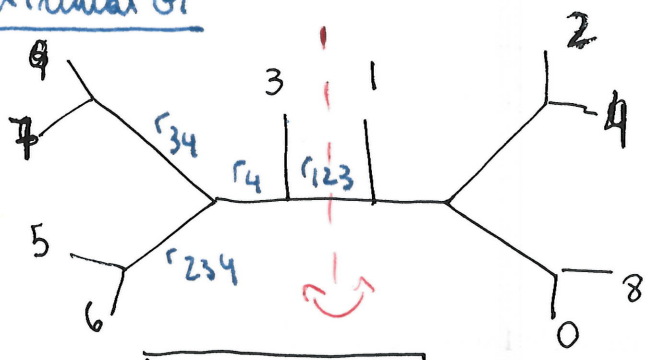
one a a z a z a q



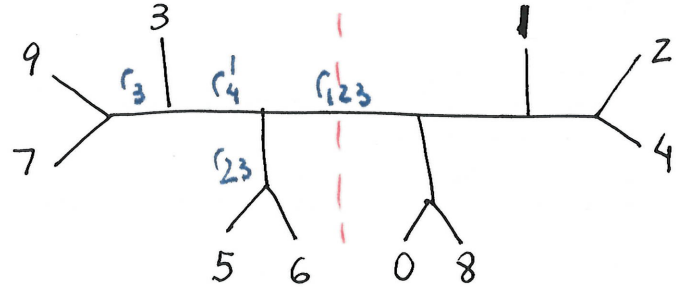
one a a z a z b

{0: F14, 1: F24, 2: G6, 3: G5, 4: F23, 5: F12, 6: E6, 7: F34, 8: F13, 9: E5}

Extremal G1



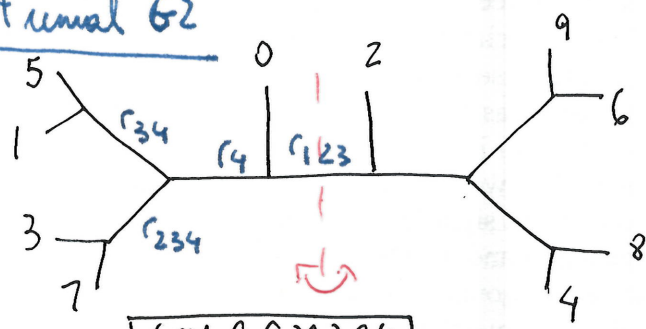
one a a z a z a q



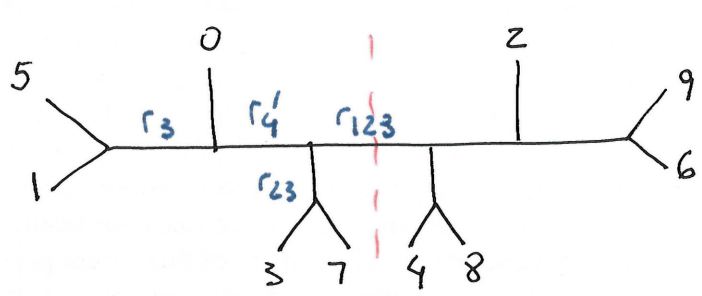
one a a z a z b

{0: F13, 1: F16, 2: F14, 3: E6, 4: F15, 5: F12, 6: E3, 7: E5, 8: E2, 9: E4}

Extremal G2



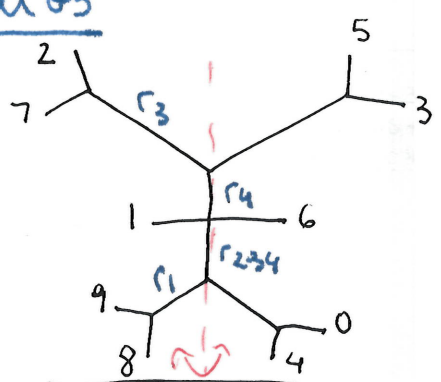
one a a z a z a q



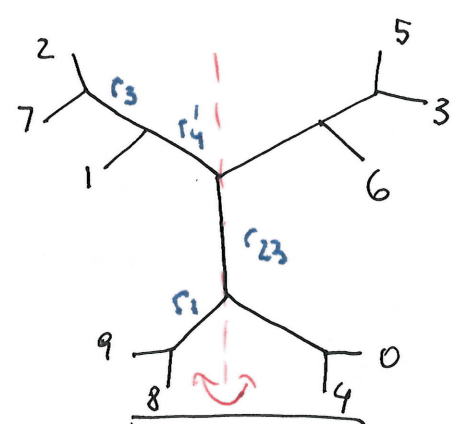
one a a z a z b

{0: E6, 1: E5, 2: F26, 3: F12, 4: F23, 5: E4, 6: F25, 7: E3, 8: E1, 9: F24}

Extremal G3



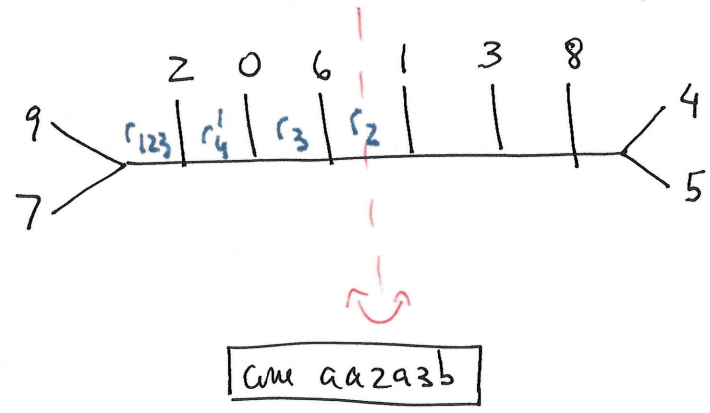
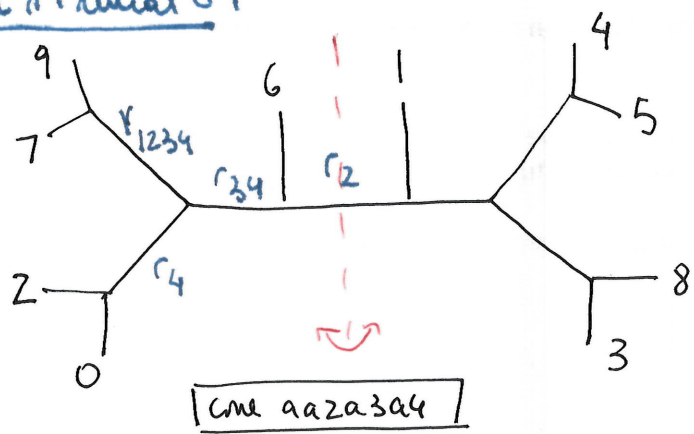
one a a z a z a q



one a a z a z b

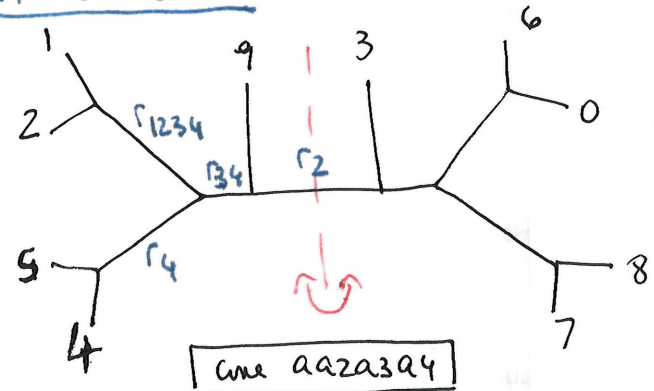
{0: E1, 1: E6, 2: E4, 3: F35, 4: E2, 5: F34, 6: F36, 7: E5, 8: F23, 9: F13}

Extremal G4



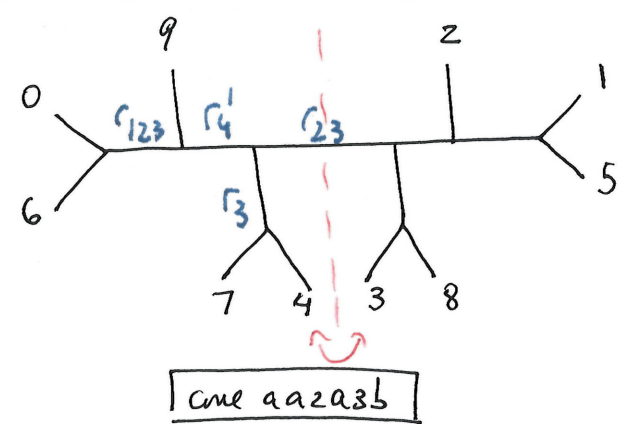
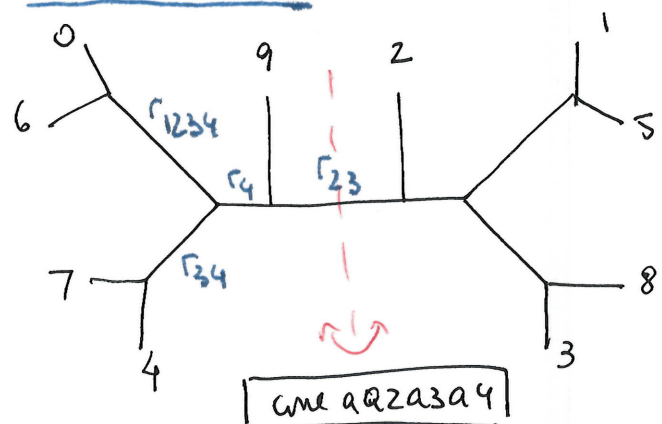
$\{0: E5, 1: F96, 2: F34, 3: F95, 4: E1, 5: E2, 6: E6, 7: F24, 8: E3, 9: F4\}$

Extremal G5



$\{0: E2, 1: F15, 2: F25, 3: F56, 4: E4, 5: F35, 6: E1, 7: F95, 8: E3, 9: E6\}$

Extremal G6

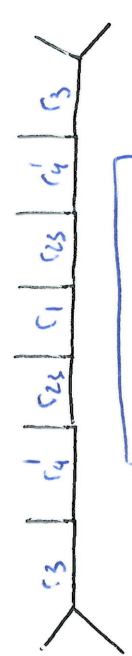
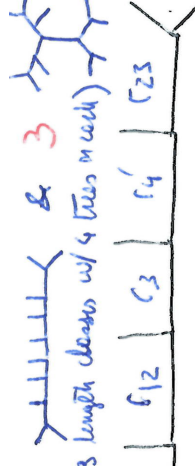
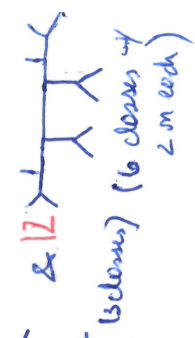


$\{0: F16, 1: E1, 2: E3, 3: F56, 4: E5, 5: E2, 6: F26, 7: E4, 8: F96, 9: F36\}$

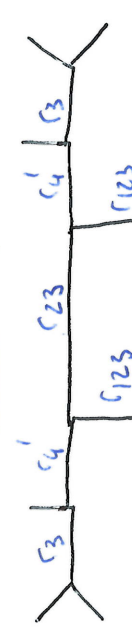
Notation: Lengths of edges in terms of scalars for 2 mxl cones of the Navski fan (lower dim'l cones are obtained by setting suitable scalars to 0)

- Left: `aaza3a4`: $r_1 a + r_2 a_2 + r_3 a_3 + r_4 a_4$ $r_1, r_2, r_3, r_4 \geq 0$
- Right: `aaza3b`: $r_1 a + r_2 a_2 + r_3 a_3 + r'_4 b$ $r_1, r_2, r_3, r'_4 \geq 0$

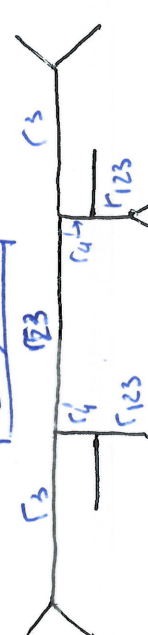
Summary of combinatorial types + lengths \rightarrow $\{a_1 a_2 a_3 b\}$ case



E1, E2, F13, F23



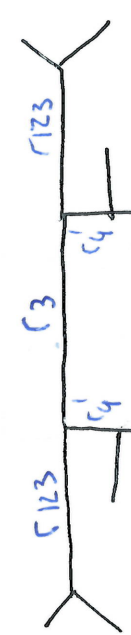
E3, F12



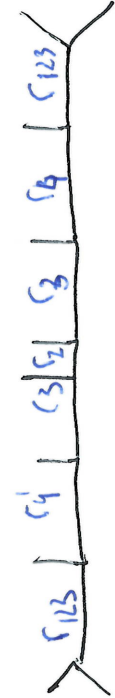
F45, G6



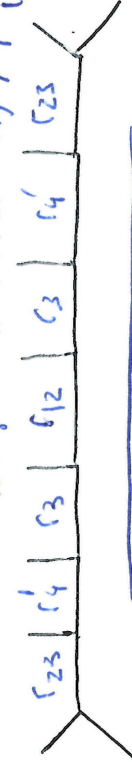
E4, E5



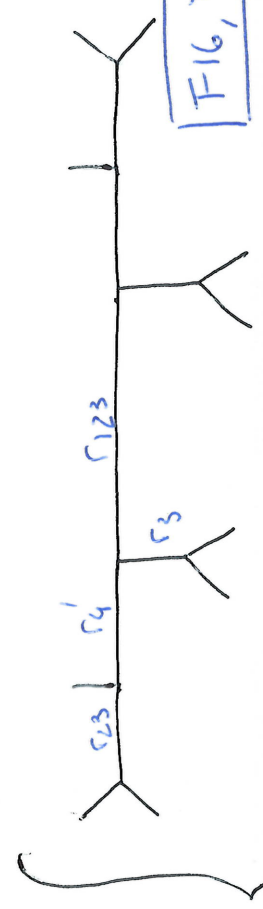
F34, F35



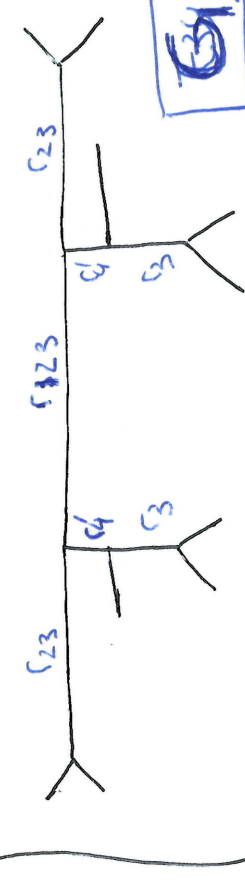
F46, F56, G4, G5



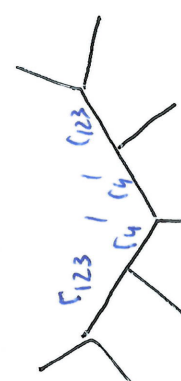
F14, F15, F24, F25



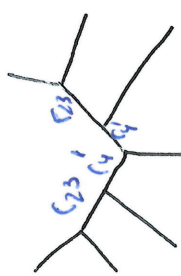
F16, F26



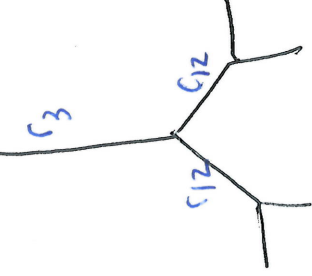
G1, G2



E6



F36



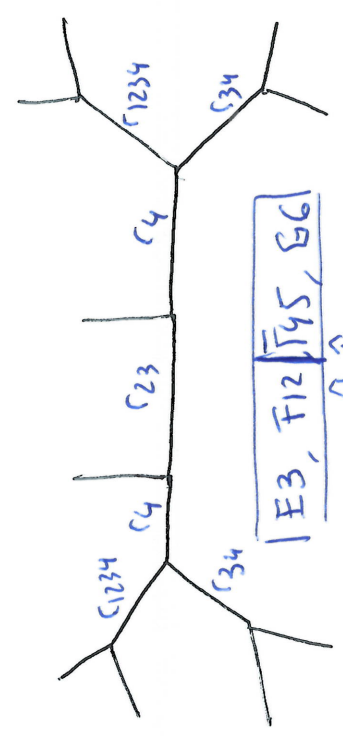
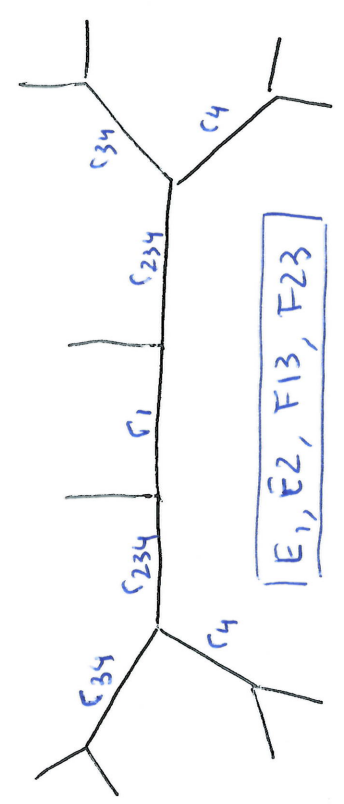
G3

Summary of combinatorial types + lengths \rightarrow

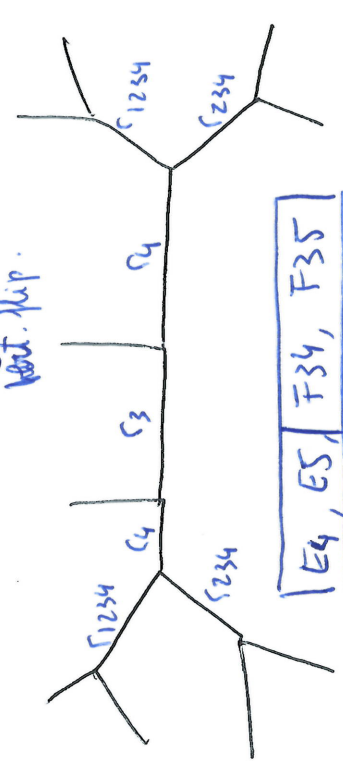
$aa_2a_3a_4$ case = 3

24

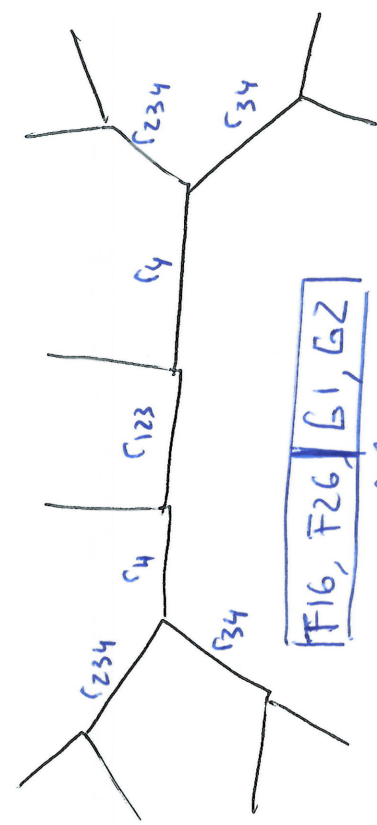
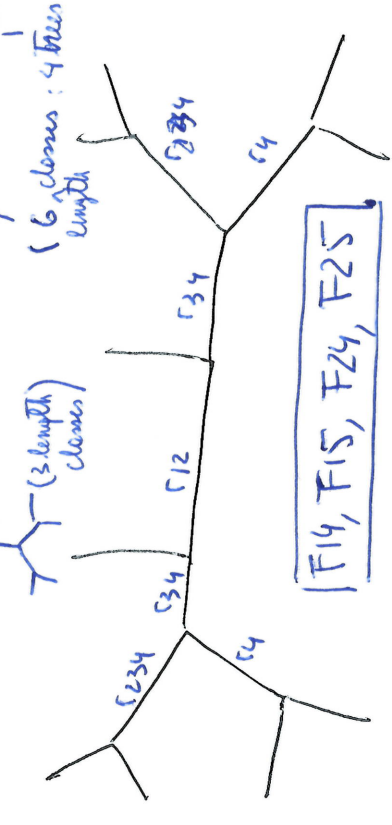
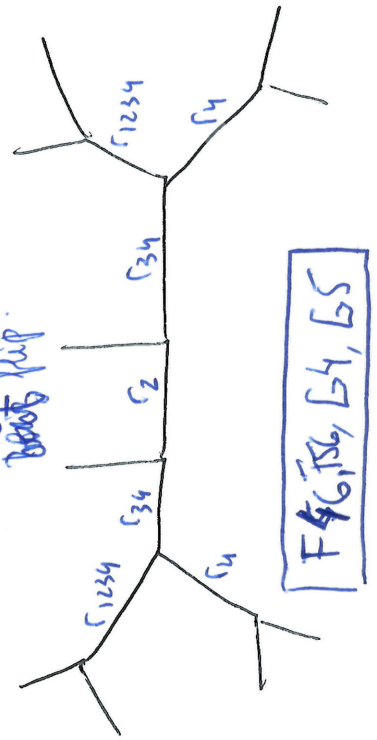
(6 closures: 4 trees on each length)



Root flip.



Root flip.



Root flip.

