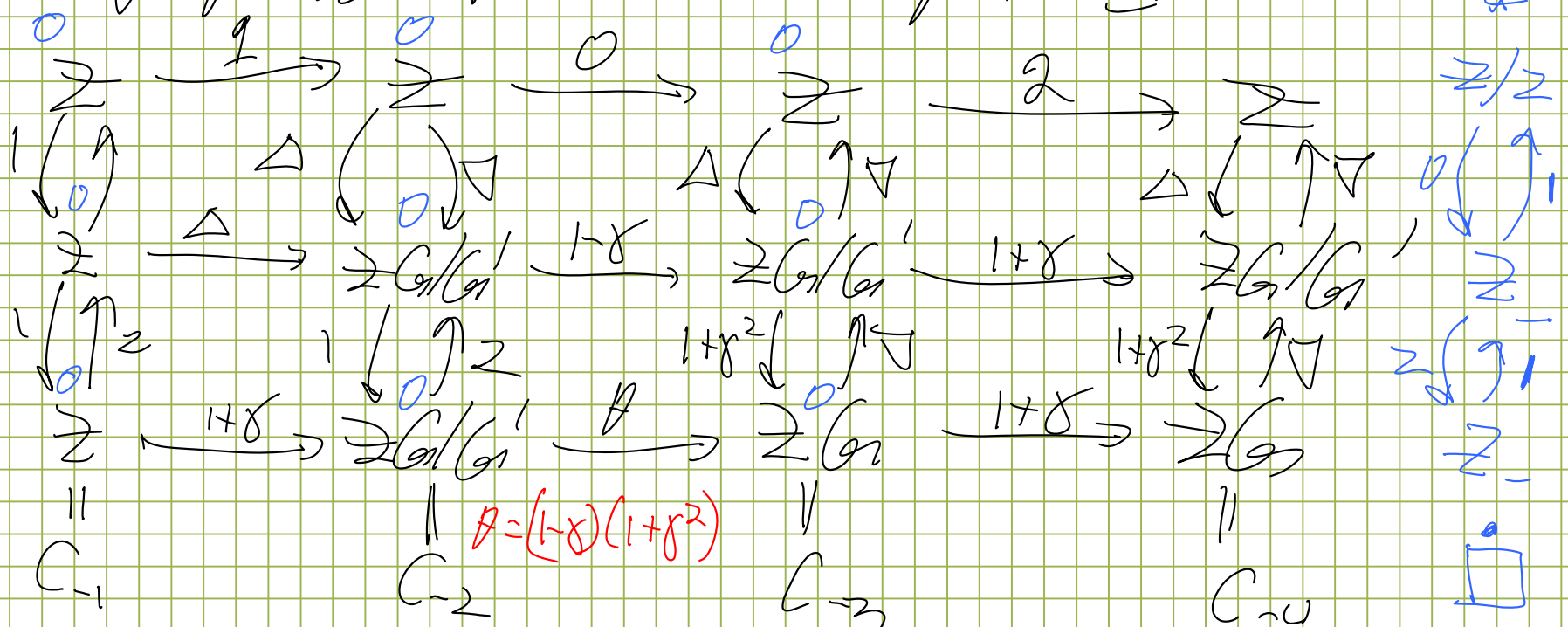


Macaulay functor chain cx for  $H_x S^{-P_4}$



$$C_{-3}^{G_1'} = C_{-4}^{G_1'} = \mathbb{Z} \{ 1+x^2, x+x^3 \}$$

$$C_{-3}^{G_1} = C_{-4}^{G_1} = \mathbb{Z} \{ 1+x+x^2+x^3 \}$$

$$C_{-2} = \mathbb{Z}[G_1/G_1'] = \mathbb{Z} \{ 1, x \}$$

$$C_{-2}^{G_1} = \mathbb{Z} \{ 1+x \}$$

Note the chart shows

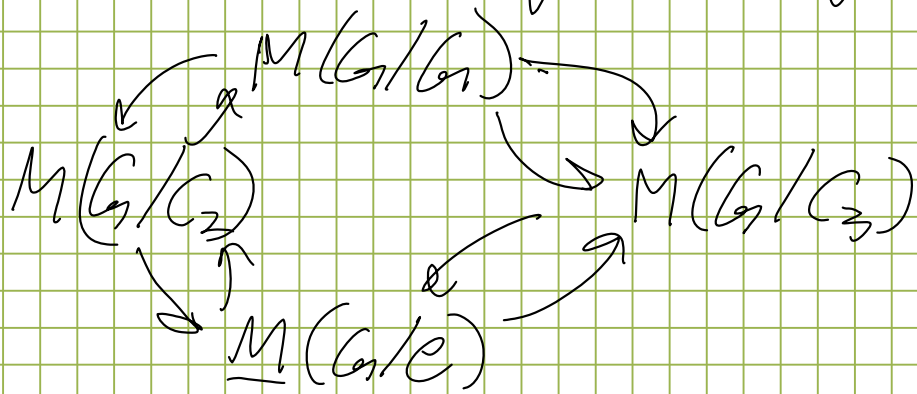
$$\prod_{i+j \in \mathbb{R}} H \cong \prod_{i+j \in (\mathbb{R} + \lambda)} H \cong \text{for all } i, j$$

It does not show  $\prod_{i+j \in \mathbb{R} + k\lambda} H \cong \text{for } j \neq k$ .

Moreover for  $j, k < 0$  is unknown.

Consider other small gps.

$G_1 = S_3 = \text{symm gp on } 3 \text{ letters}$

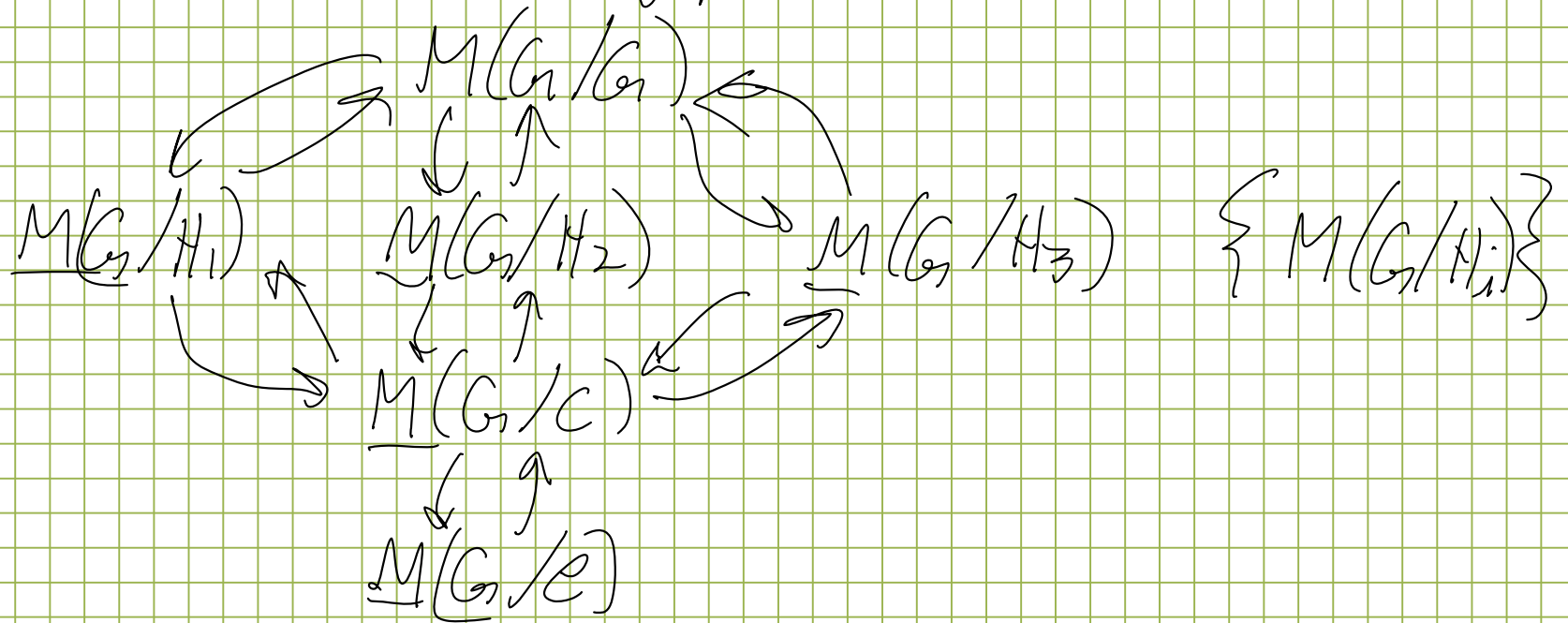


$G = Q_8 =$  quaternion gp

3 nonconjugate subgps  $\cong C_4$   $H_1, H_2, H_3$

1 subgp of order 2  $C$

1 trivial subgp



$$G = C_2 \times C_2 = \underline{Q_8} / C$$

3 nonconjugate subgrps  
of index (and order) 2