

$$\mathbb{Z}_{36} = \langle a \mid 36a \rangle$$

$$b = 9a \quad \mathbb{Z}_4 \oplus \mathbb{Z}_9 = \langle b, c \mid 4b, 9c \rangle$$

$$c = 4a$$

$$a = b - 2c$$

$$\mathbb{Z}_2 \oplus \mathbb{Z}_{18} = \langle a, b \mid 2a, 18b \rangle$$

$$c = 9b \quad \mathbb{Z}_2 \oplus \mathbb{Z}_2 \oplus \mathbb{Z}_9 = \langle c, d \mid 2c, 9d \rangle$$

$$d = 2b$$

$$b = c - 4d$$

$$\mathbb{Z}_6 \oplus \mathbb{Z}_{20} \oplus \mathbb{Z}_{36} = \langle a, b, c \mid 6a, 20b, 36c \rangle$$

$$\mathbb{Z}_2 \oplus \mathbb{Z}_{12} \oplus \mathbb{Z}_{180} = \langle d, e, f \mid 2d, 12e, 180f \rangle$$

$$d = 3a + 10b$$

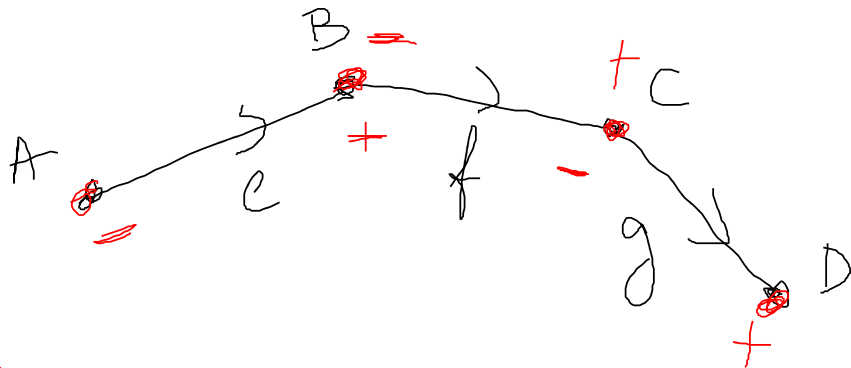
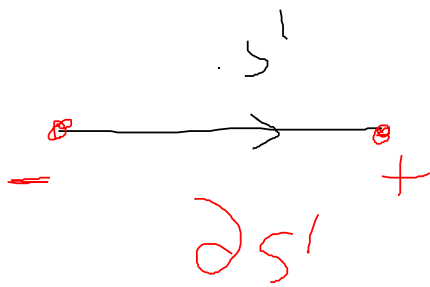
$$e = a + 5b$$

$$f = 4b + c$$

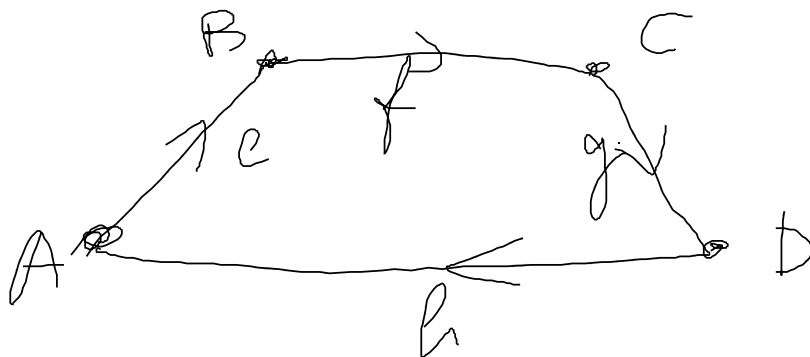
$$a = 5d - 16e$$

$$b = -d + 3e - 36f$$

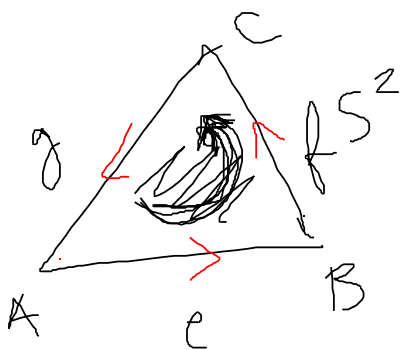
$$c = -35f$$



$$\partial(e+f+g) = D - \cancel{C} + \cancel{C} - B + B - A$$

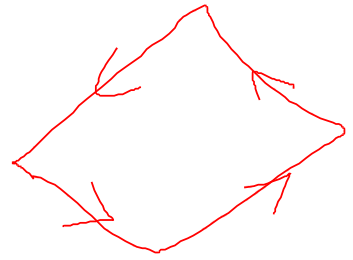
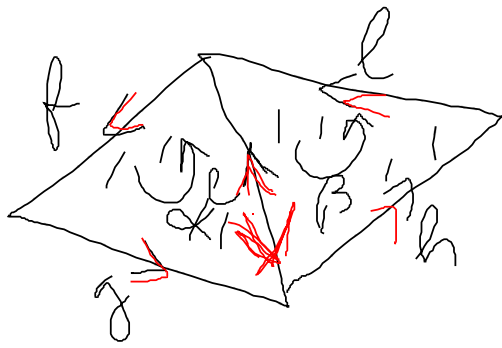


$$\partial(e+f+g+h) = \cancel{A} - \cancel{B} + \cancel{B} - \cancel{C} + \cancel{C} - \cancel{D} + \cancel{D} - \cancel{A} = 0$$

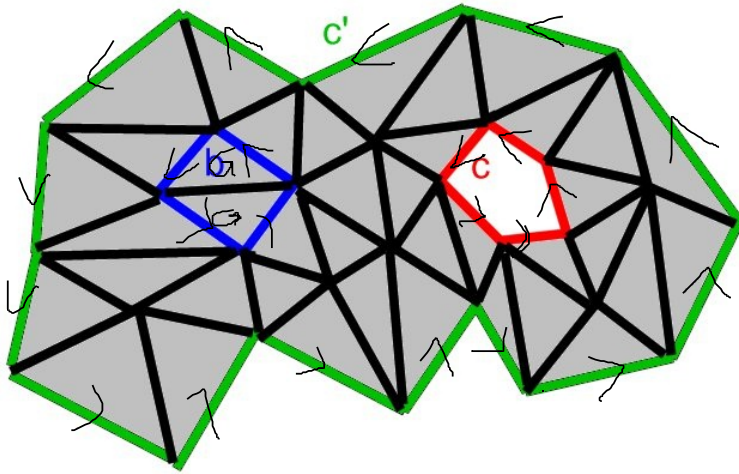


$$\partial(s^2) = e + f + g$$

$$\partial\partial(s^2) = 0$$



$$\partial(\alpha + \beta) = g + e + f + h + l - e$$



$$\partial(\text{corona circ.}) = \text{verde} - \text{rosso}$$

$$\pi_1(\text{Klein}) \cong \langle a, b \mid aba^{-1}b \rangle$$

$aba = b$

$$\pi_1(\mathbb{R}P^2 \# \mathbb{R}P^2) \cong \langle c, d \mid c^2 d^{-2} \rangle$$

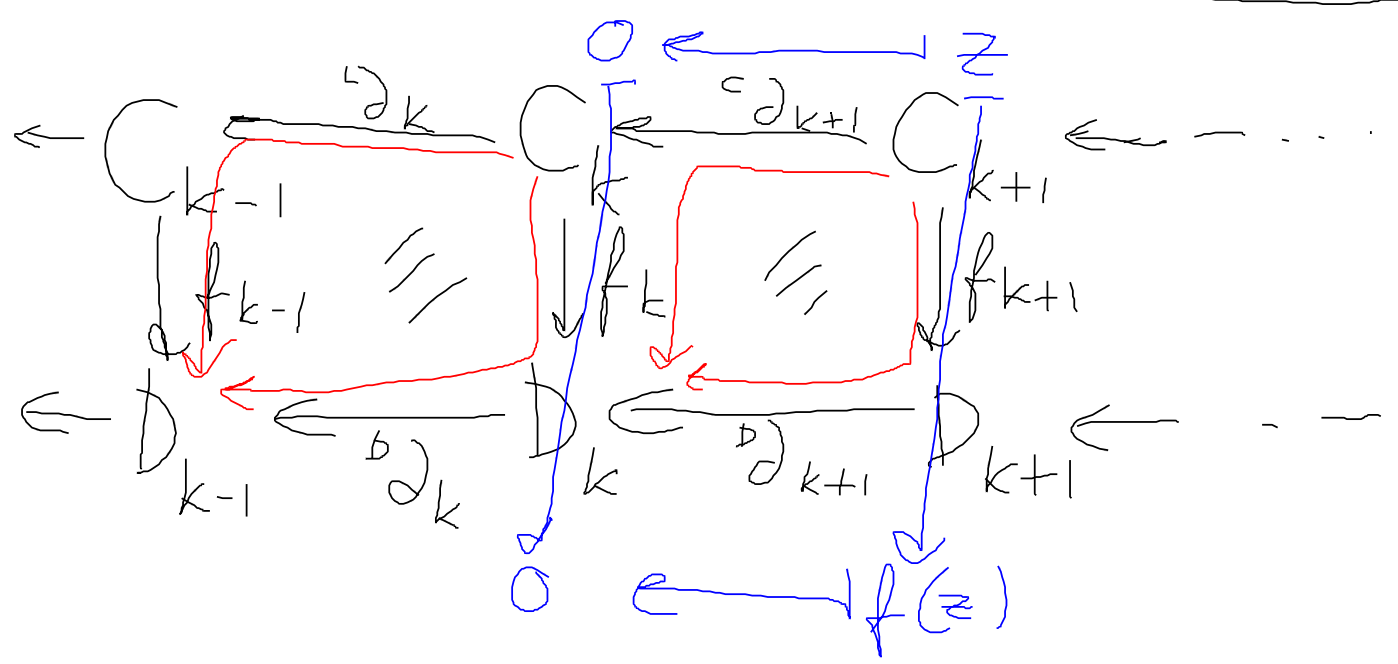
$c^2 = d^2$

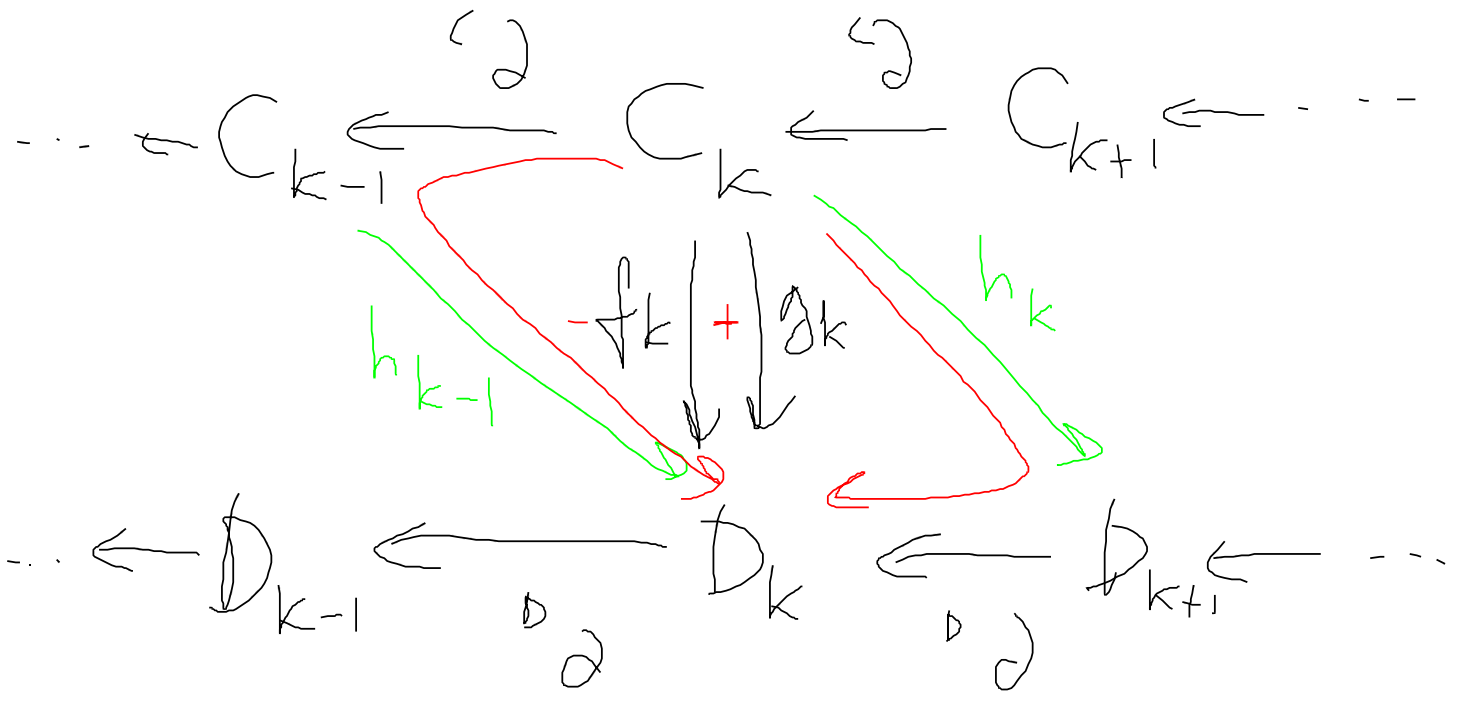
$$c = ab \quad c^2 = abab = b^2 = d^2$$

$$d = b$$

$$a = cb^{-1} = cd^{-1}$$

$$b = d \quad aba = c \cancel{d^{-1}} d \cancel{c} d^{-1} = c^2 d^{-1} = d^2 d^{-1} = d = b$$





$$C_1 + C_2 = 3 \text{ tast} + 8 \text{ gomme} + 3 \text{ pennas} + 2 \text{ moises}$$
