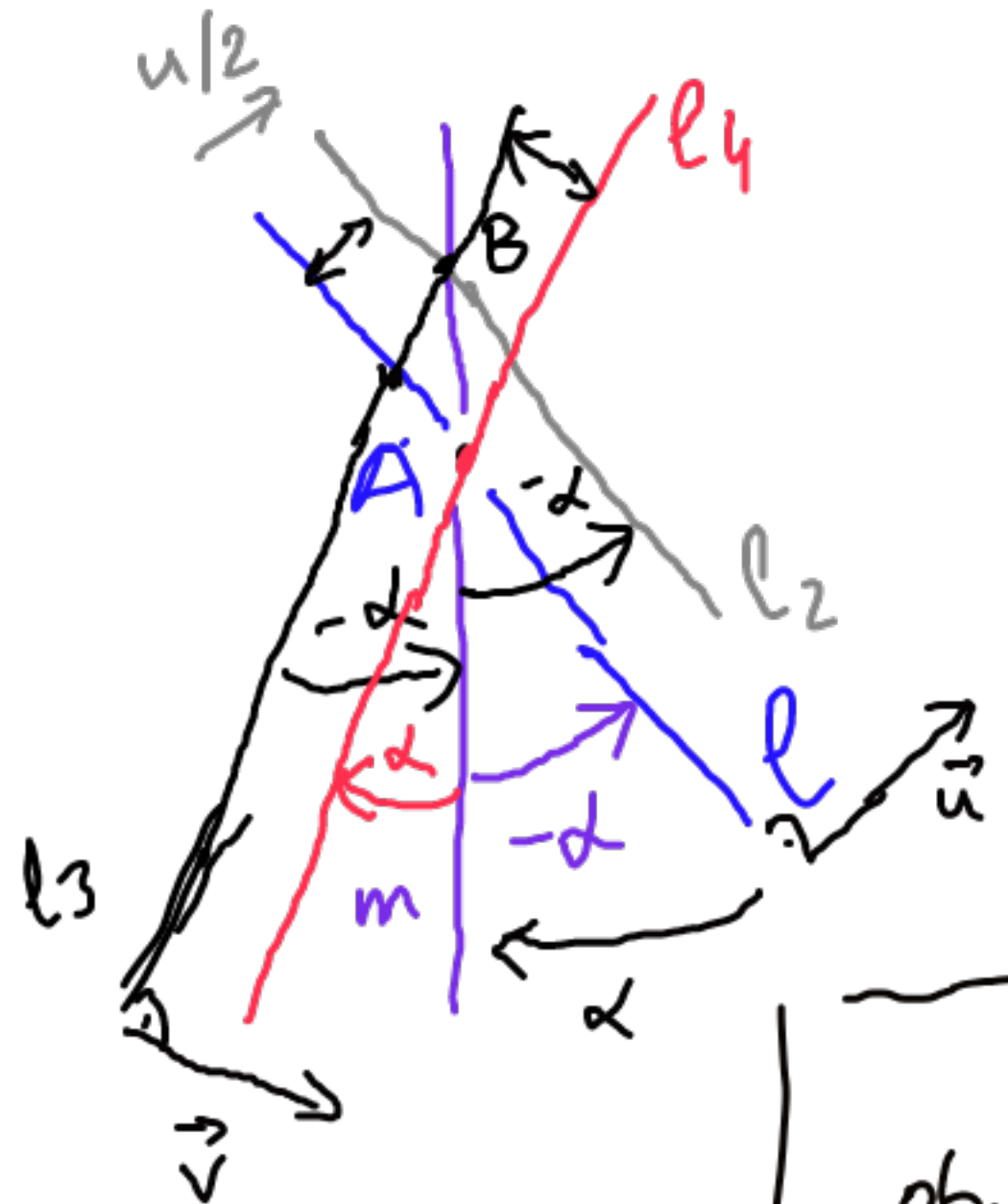


V1-7 $O_A^{2\alpha} T_u O_A^{-2\alpha} = O_A^{2\alpha} \underbrace{R_{l_2} R_l R_m}_{\substack{\text{předst. přes } A \\ \text{— jest post. do } \vec{u}}} O_A^{-2\alpha} = O_A^{2\alpha} R_{l_2} R_m = O_A^{2\alpha} O_B^{-2\alpha} = R_{l_4} R_m R_m R_{l_3} =$

$= R_{l_4} R_{l_3} = T_v$

v jest vektorem u obrotu o 2α



obrot o α vpl A
 $= R_m R_l$



předst. o \vec{u}
 jest $= R_{l_2} R_{l_1}$,
 kde $l_1, l_2 \perp \vec{u}$



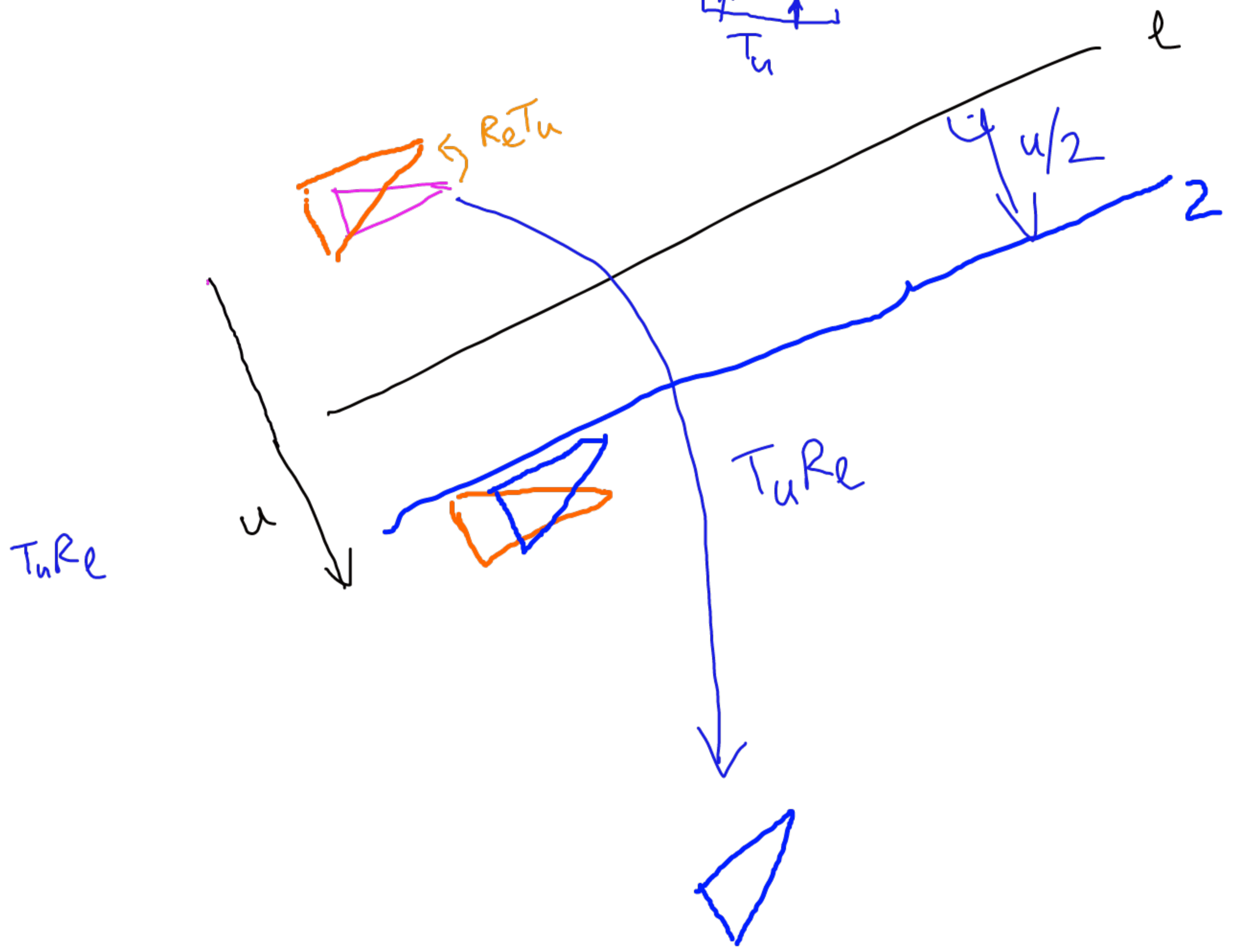
alle
v1-8

$$T_u R_{\ell} T_u = T_u \underbrace{T_u R_{\ell}}_{G_u} = T_{\vec{u} + \vec{u}} P_{\ell} = T_{2\vec{u}} R_{\ell} = G_{\vec{u}}^{-1} z_{\vec{u}}$$



$\frac{v_{1-8}}{T_u R_e T_u} \ll \frac{u \perp l}{T_u}$

$R_2 h_u R_u T_u = R_2 T_i = R_2 \overbrace{R_2 R_2}^I R_u = R_u$

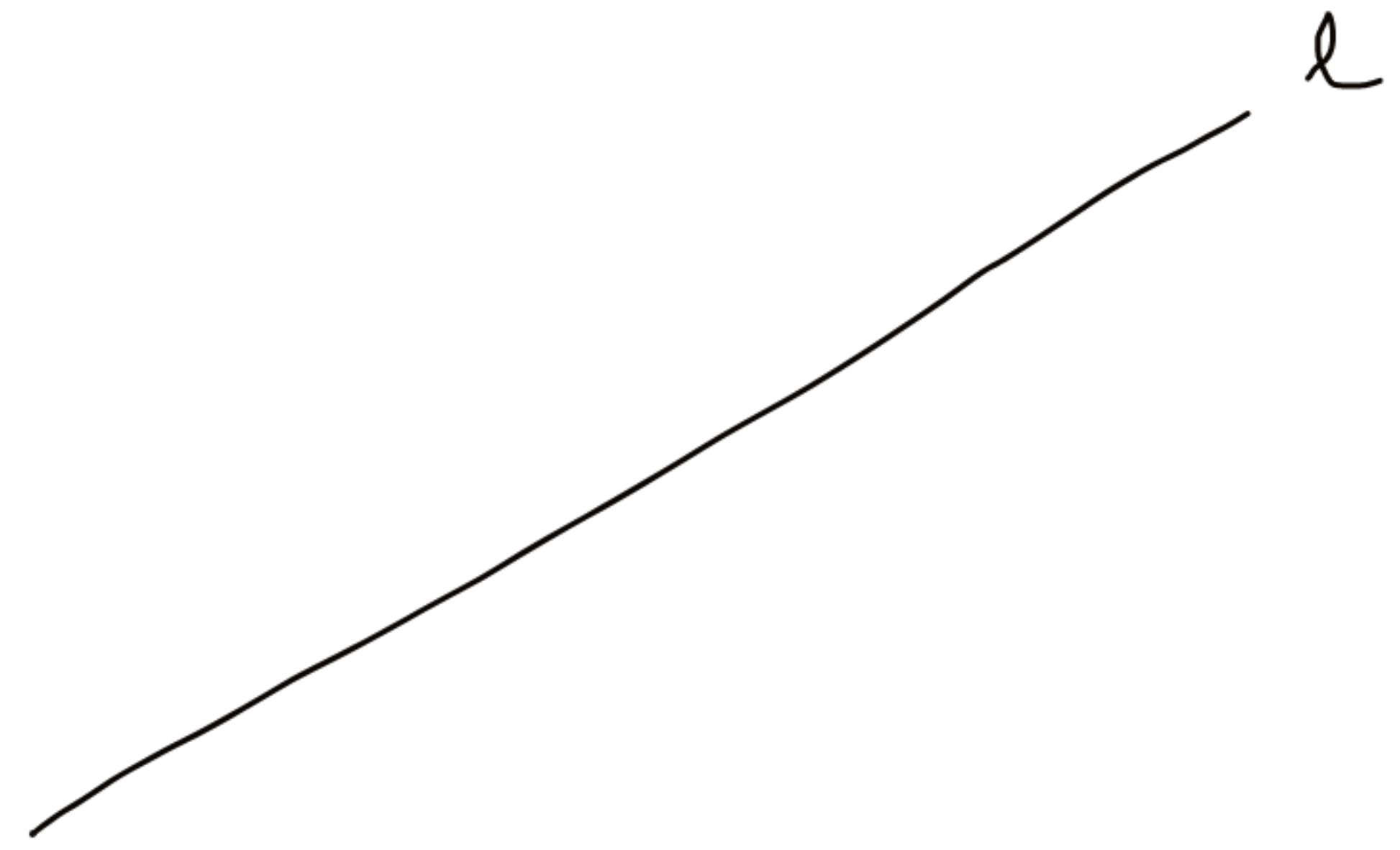


V1-8 ogólny przypadek

$$T_u R_e T_u = \underbrace{T_{u_2}}_{T_u} \left(\underbrace{T_{u_1}}_{T_u} R_e \underbrace{T_{u_1}}_{T_u} \right) T_{u_2} = T_{u_2} R_e T_{u_2} = G_{2u_2}^l$$

R_e z poprzedniego przypadku

↑
pierwszy przypadek



$$u = u_1 + u_2$$
$$u_1 \perp l$$
$$u_2 \parallel l$$

V1-11

$$R_e D_A^\alpha R_e = R_e R_{l_2} R_e R_l$$

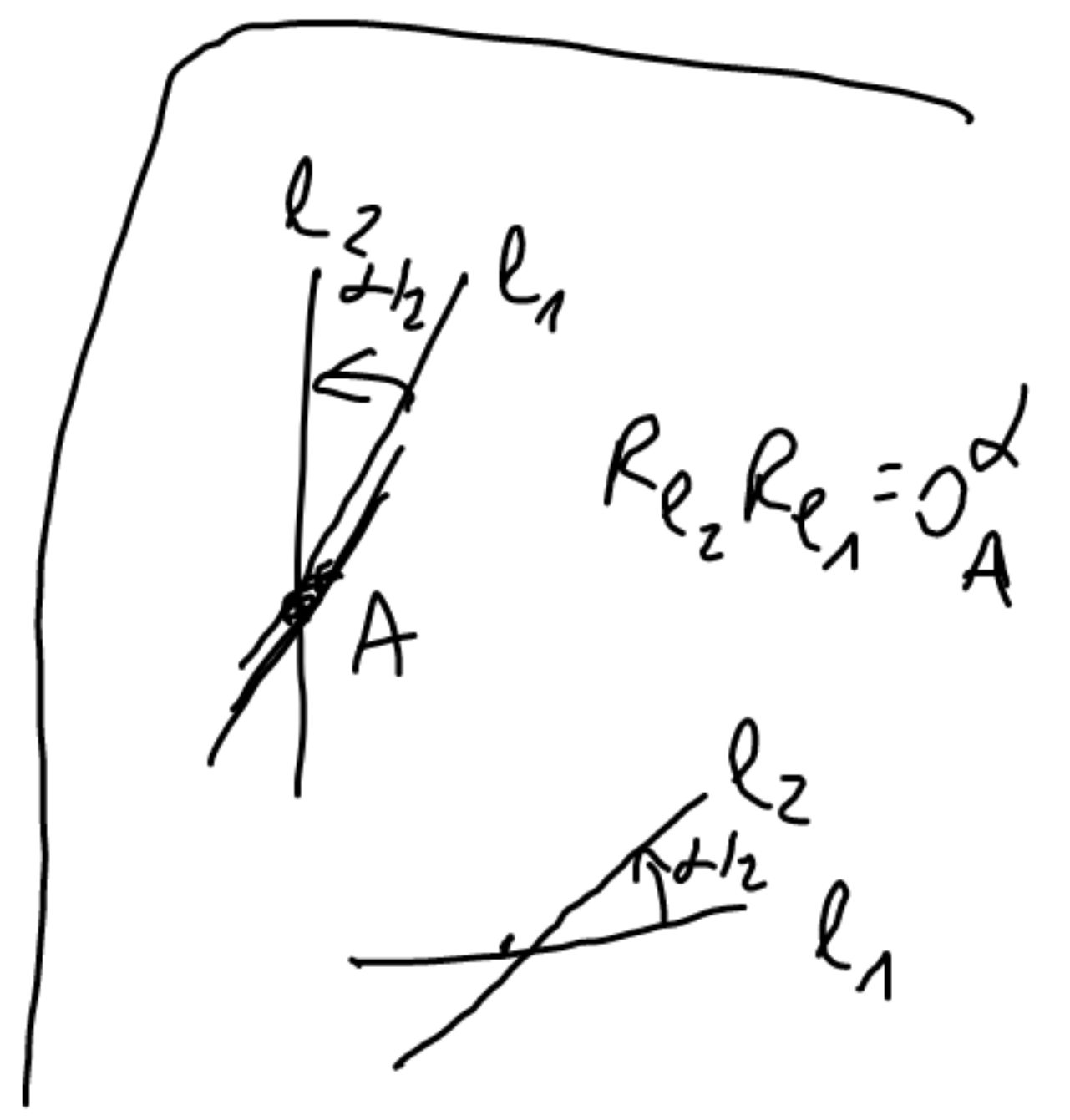
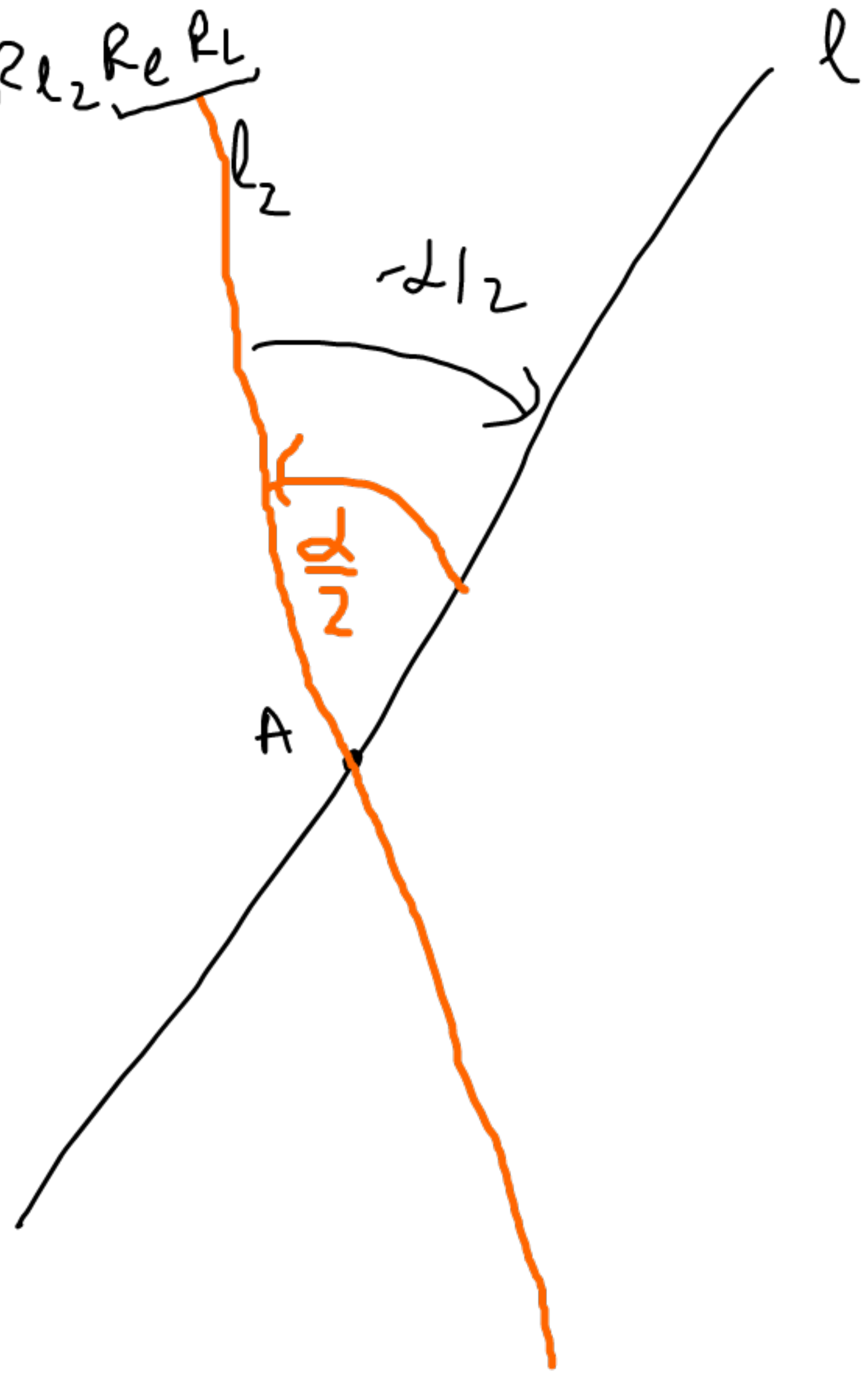
$A \in l$

$$R_{l_2} R_l$$

$$= \cancel{R_{l_2}} R_l$$

$$= R_l R_{l_2}$$

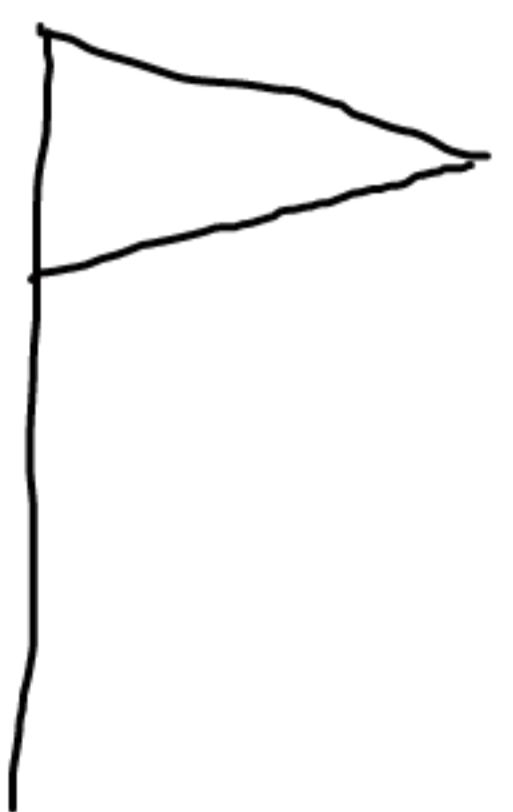
$$D_A^{-\alpha}$$



VII

$$C_1 = \{Id\}$$

$$C_2 = \{Id, H_A\} = \{Id, \sigma_A^{180^\circ}\}$$

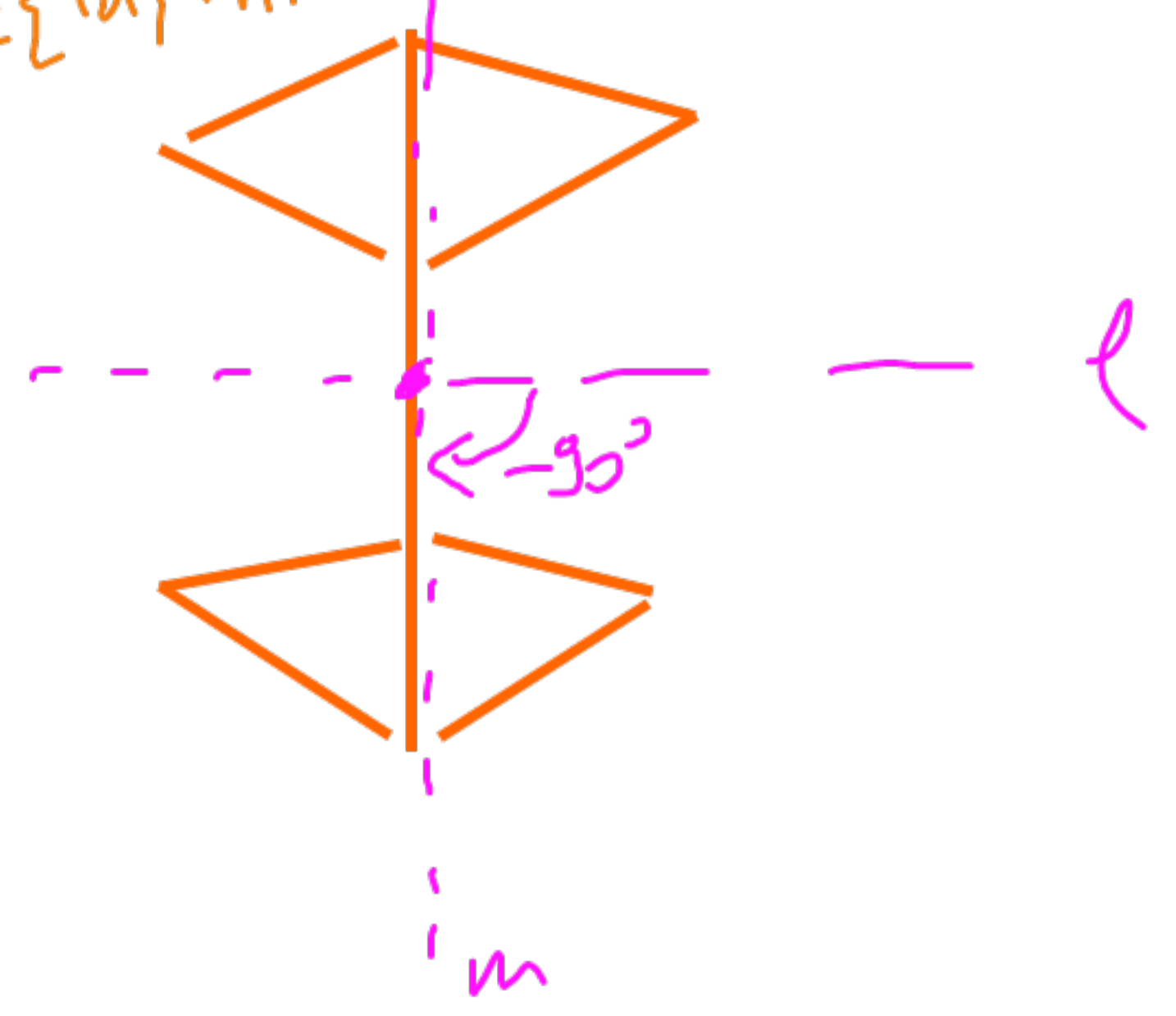


$$C_3 = \{Id, \sigma_A^{120^\circ}, \sigma_A^{240^\circ}\}$$

$$C_4 = \{Id, \sigma_A^{90^\circ}, \sigma_A^{180^\circ}, \sigma_A^{270^\circ}\}$$



$$D_2 = \{Id, H_A, R_l, R_m\} \quad l \perp m$$

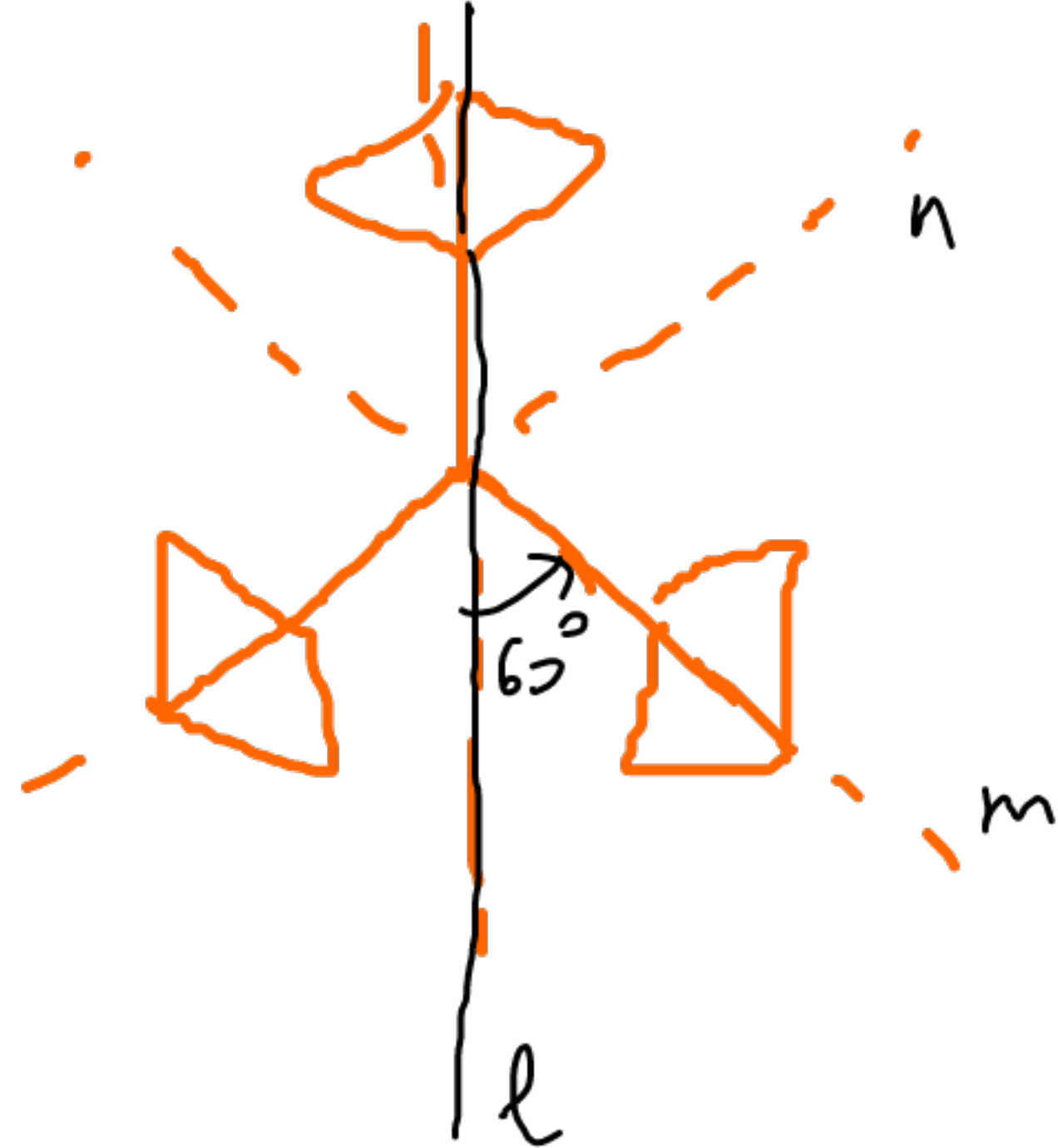


VII-1

$$D_1 = \{id, R_e\}$$



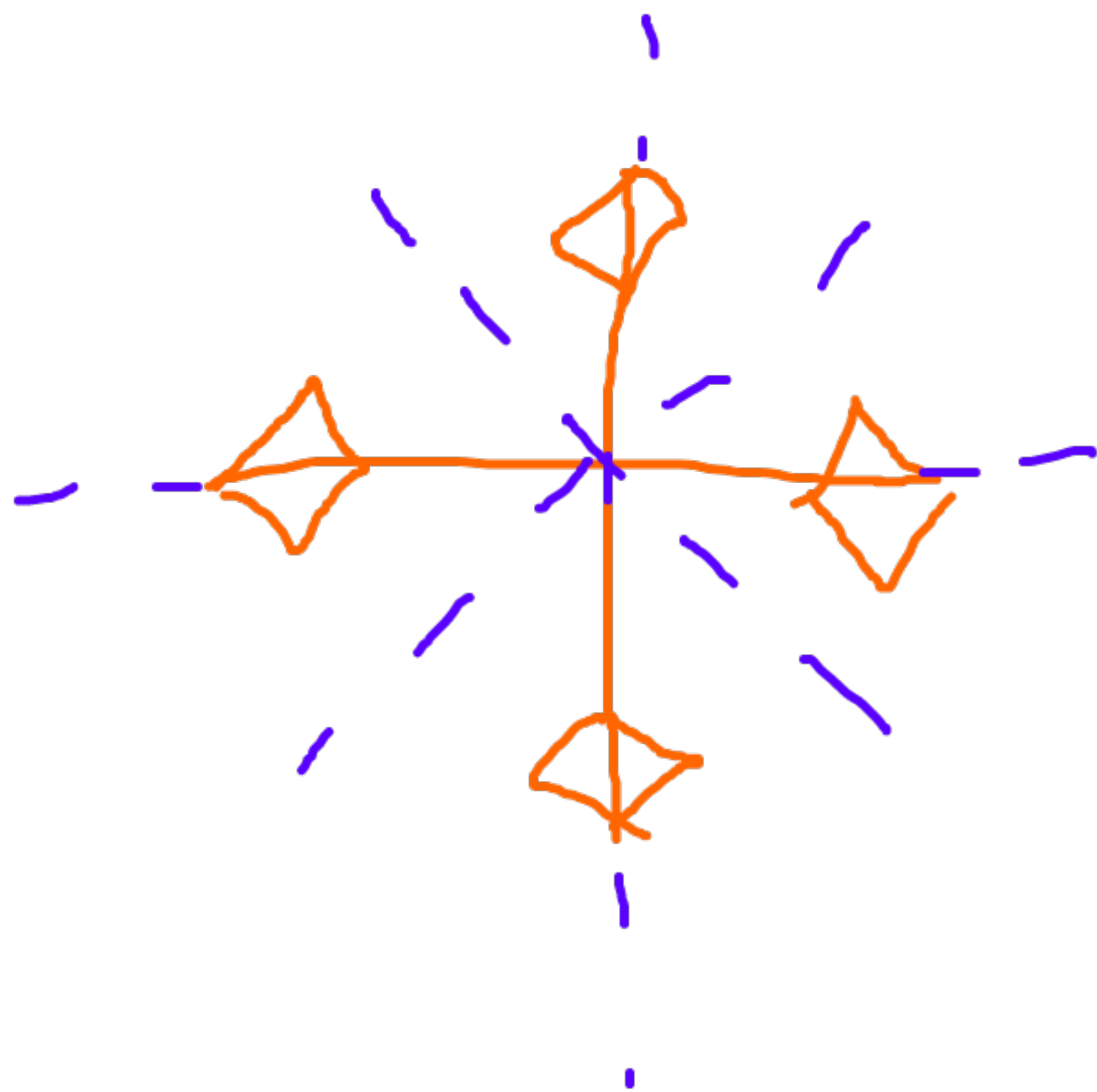
$$D_3 = \{id, \underbrace{O_A^{120^\circ}, O_A^{240^\circ}}, \underbrace{R_e}, \underbrace{R_m, R_n}\}$$



$$O_A^{120^\circ} = R_n R_e$$

$$O_A^{120^\circ} R_e = R_n R_e R_e = R_n$$

$$D_4 = \{Id, \sigma_A^{90^\circ}, \sigma_A^{180^\circ}, \sigma_A^{270^\circ}, R_{L1}, R_{L2}, R_{L3}, R_{L4}\}$$



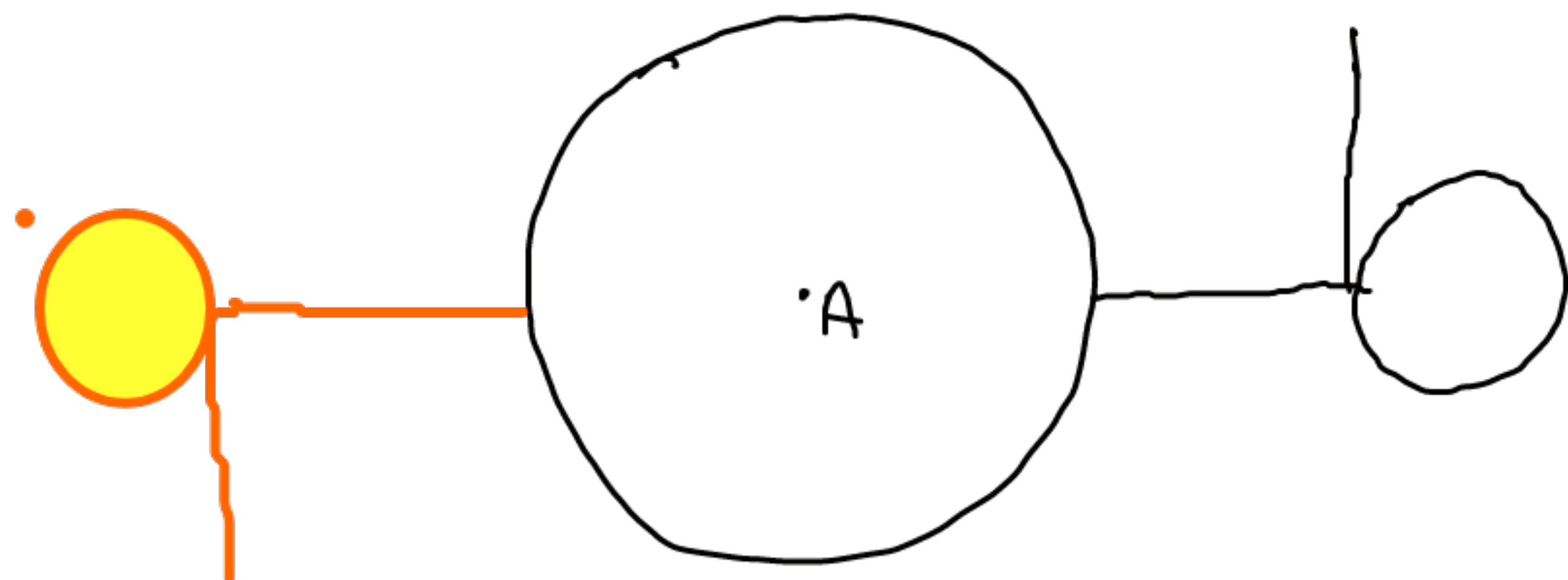
VII

$$C_1 = \{1, \sigma\}$$

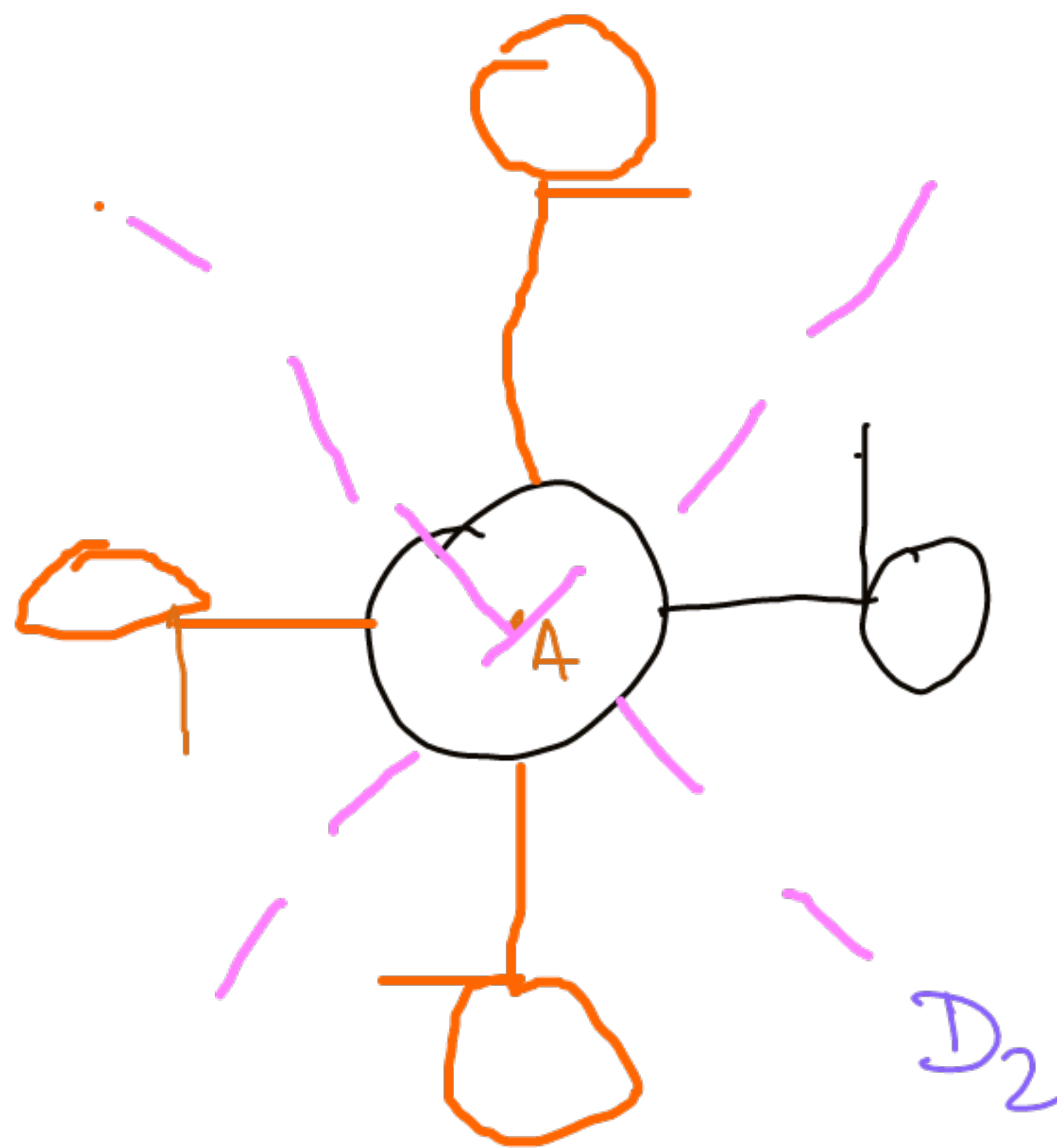
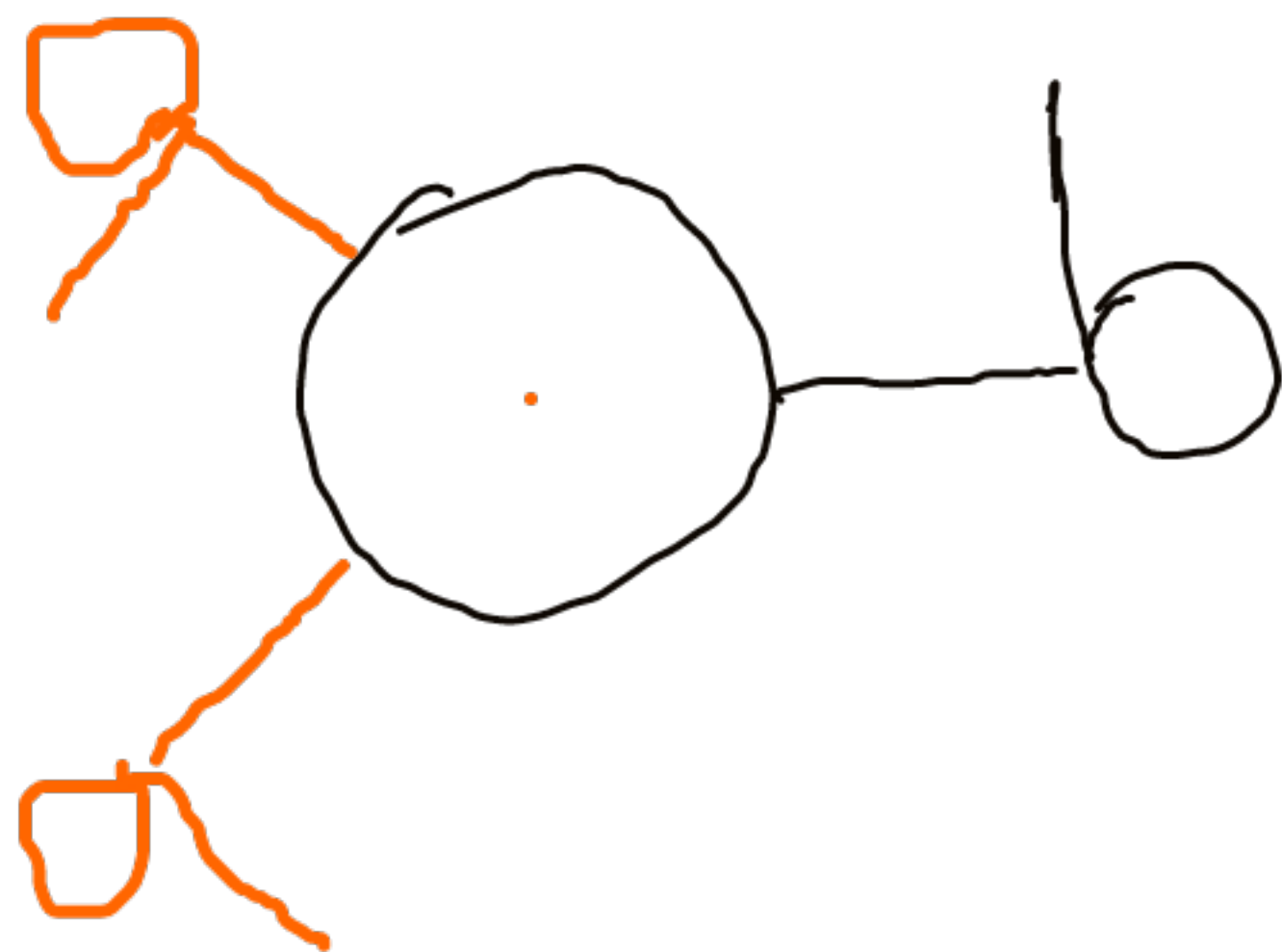
$$C_2 - \text{obrót o} \frac{360^\circ}{2}$$

$$C_3 - \text{obrót o} \frac{360^\circ}{3}$$

C_2



C_3

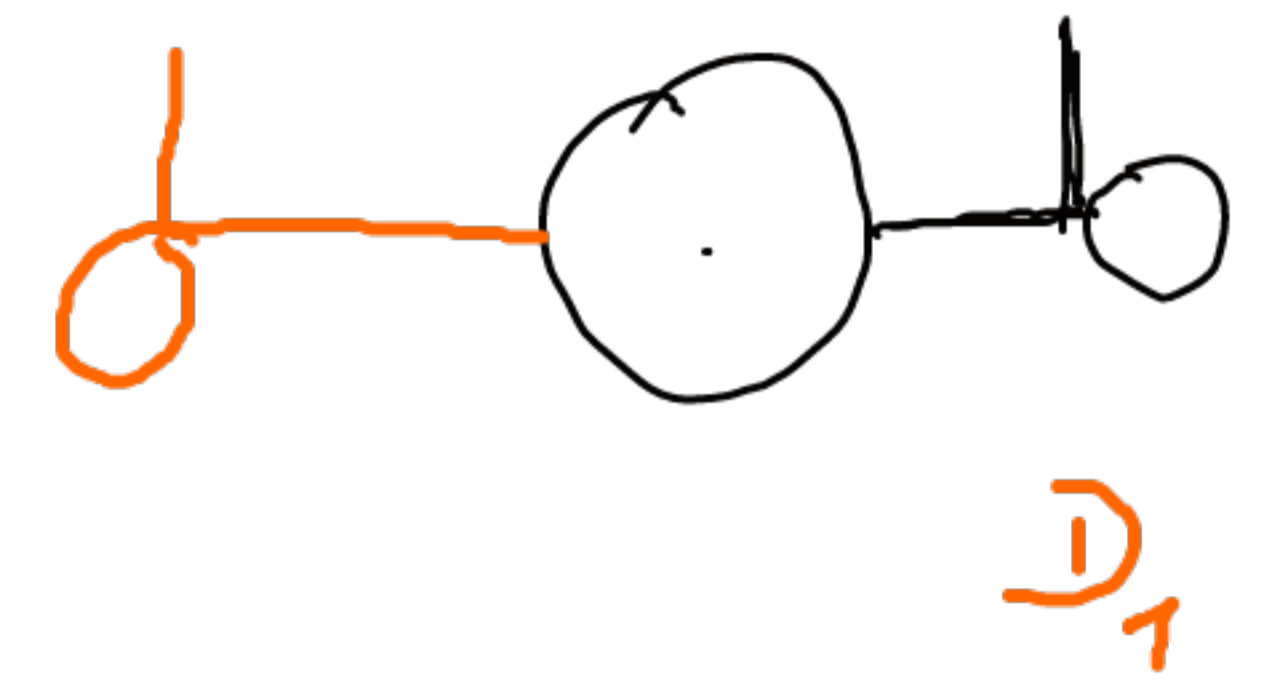
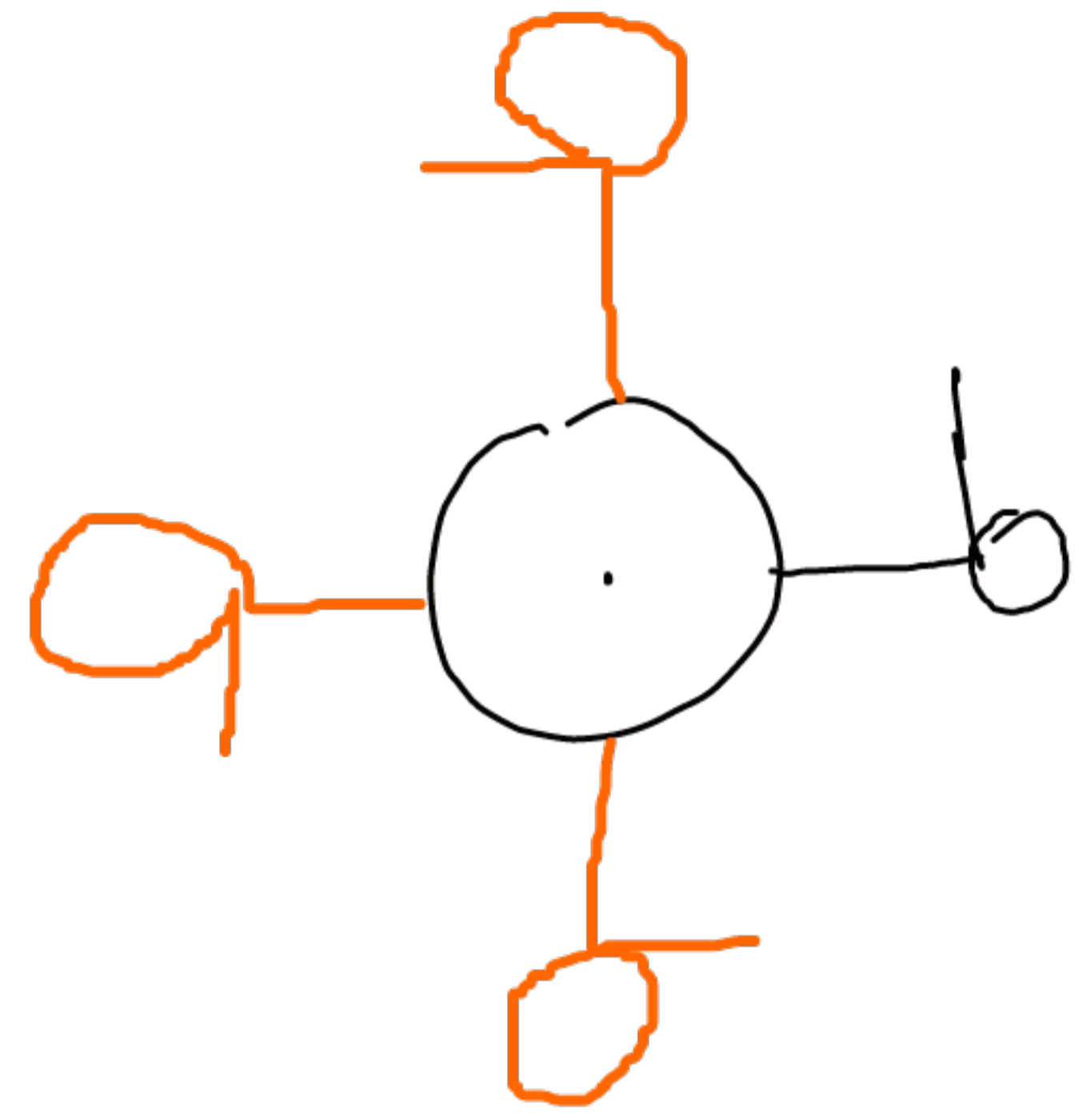


C_2 lub D_2

jest obrót o 180° w grupie sym.
ale nie ma obr. o mniejsze kąty

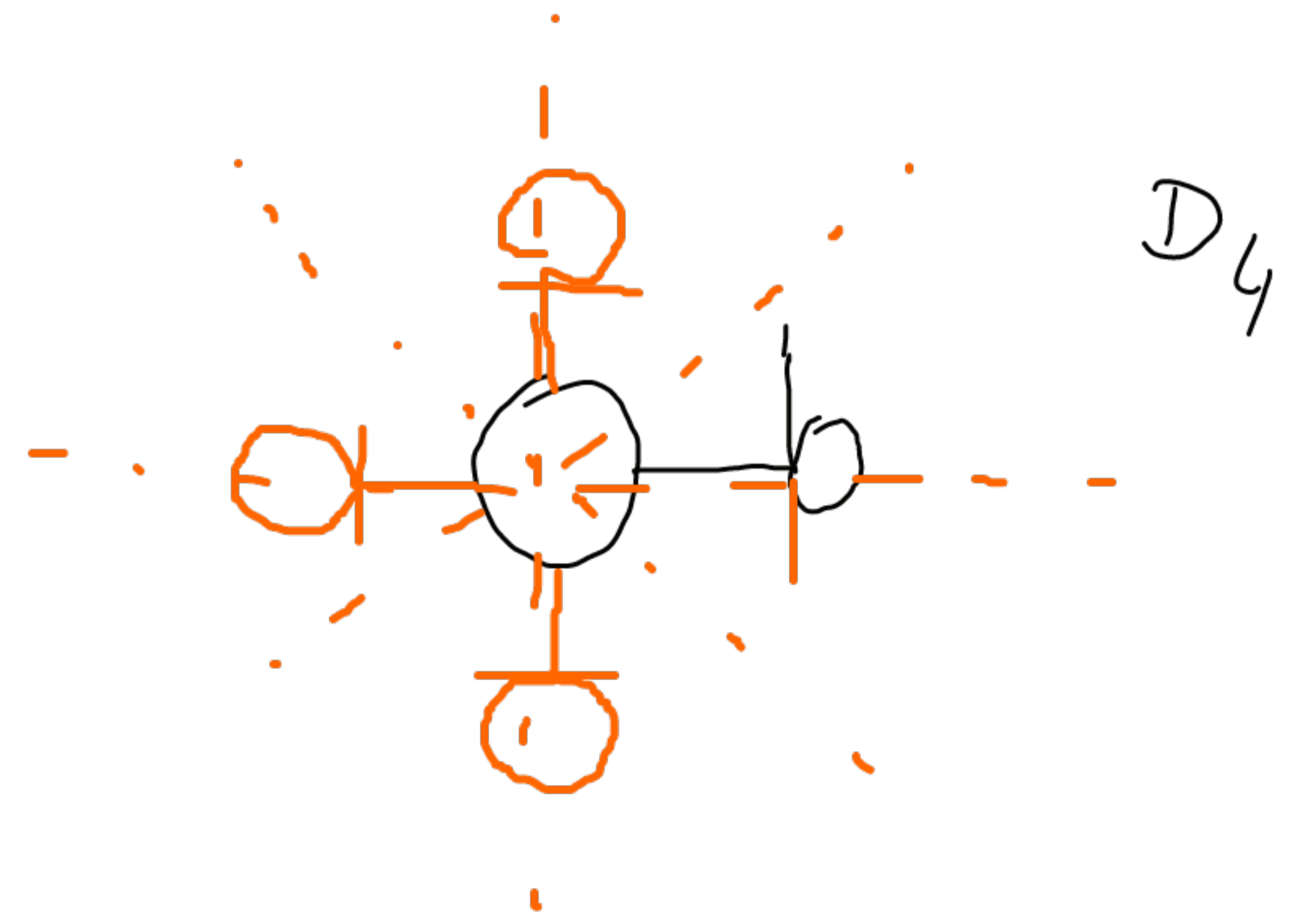
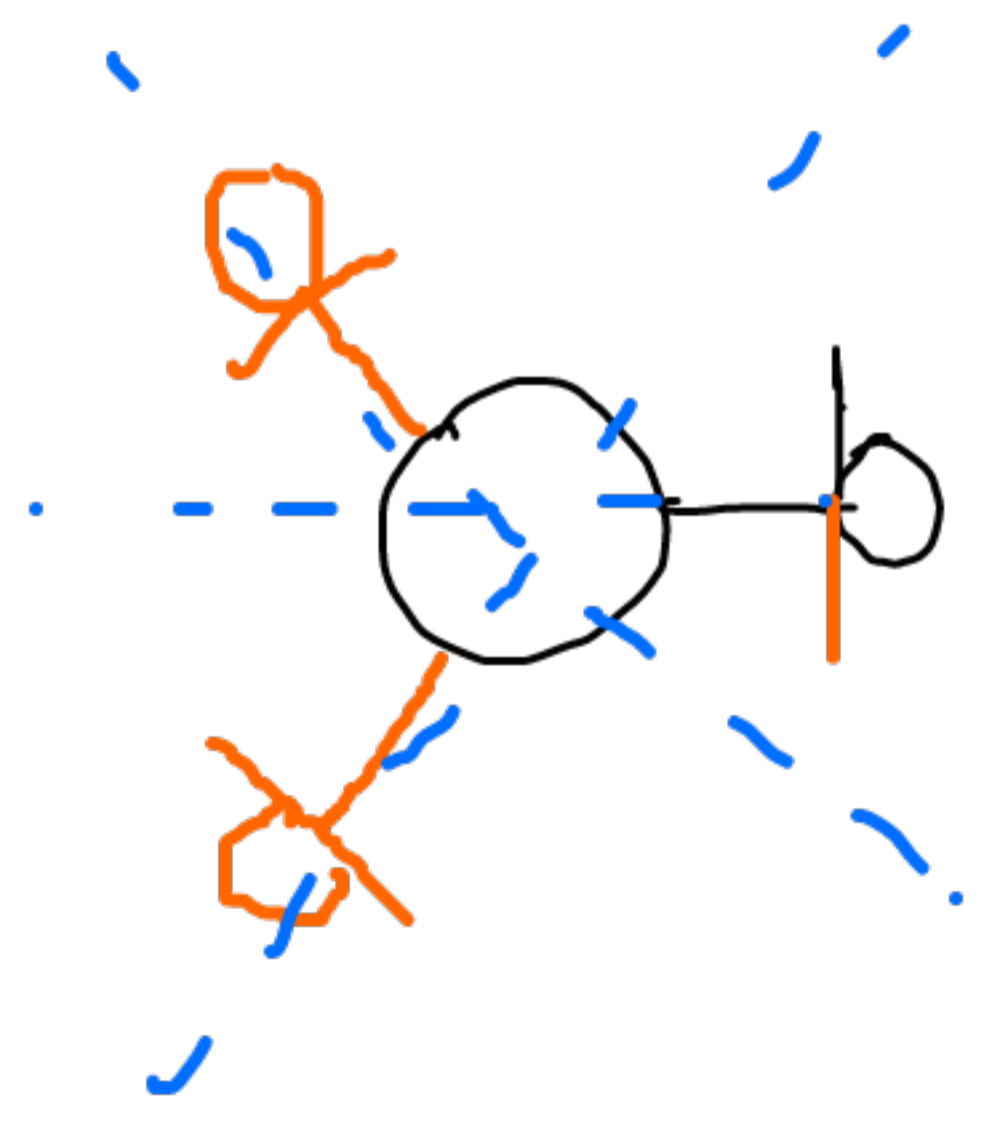
VII-2

C_4



D_2

$$D_3 = \{1d, 0120^\circ, 0240^\circ, R_L, R_M, R_R\}$$



D_4