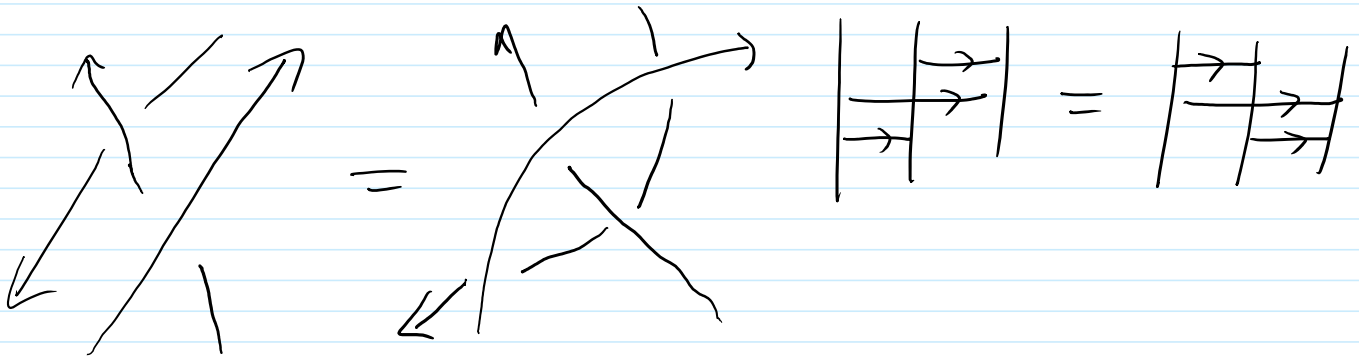
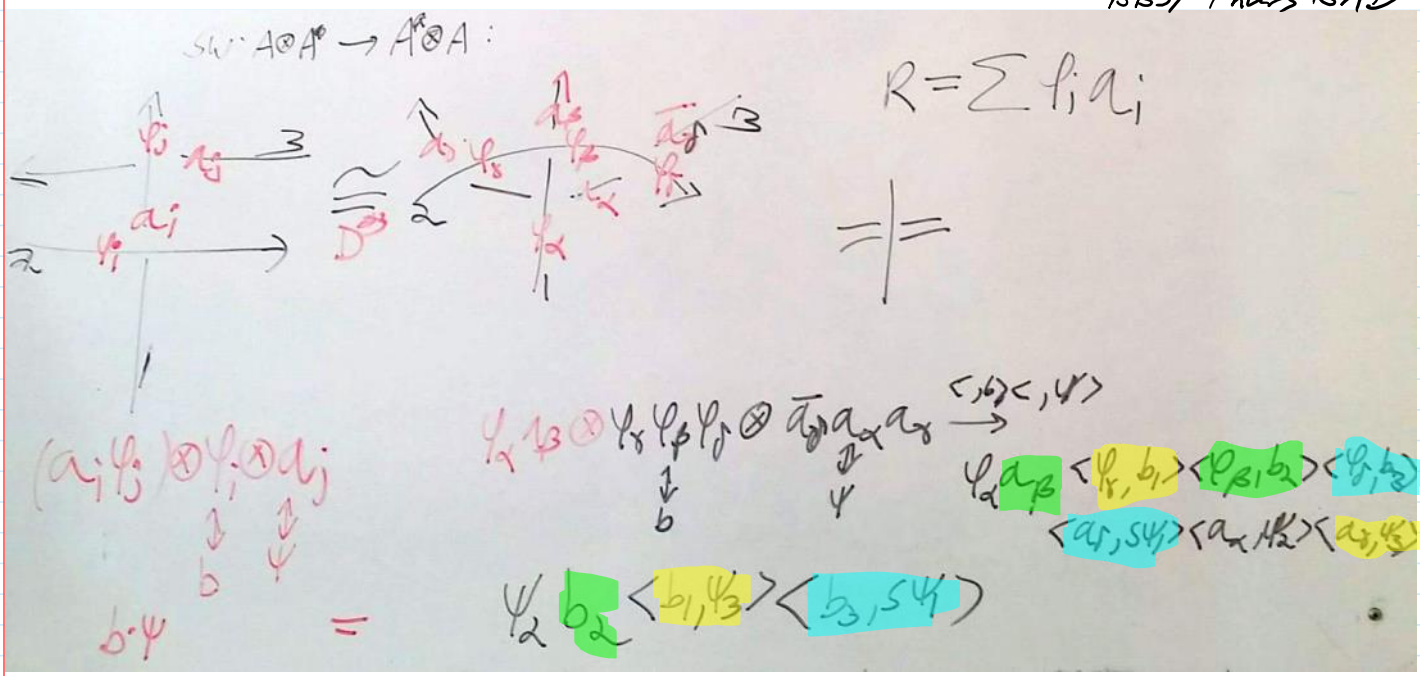
# Double conventions

May 15, 2017 4:22 AM



BBS/Thurston D




claim used: $\langle b,\psi\rangle=\sum_\alpha \langle b,\varphi_\alpha\rangle\langle a_\alpha,\psi\rangle$

---

well-definedness:

$$b\cdot\psi = \psi_2 b_2 \langle b_1,\psi_1\rangle\langle b_3,S\psi_3\rangle$$ (a variant of the above)

claim This is a degree non-decreasing operation.

Aside Is it obvious that

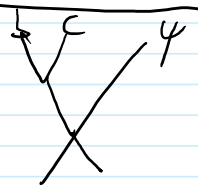
$$\langle b_1,\psi_1\rangle\langle b_2,S\psi_2\rangle = \eta(b)\eta(\psi)$$ ?

Indeed,

$$lhs = \langle b, \psi_1 S\psi_2 \rangle = \langle b S b_2, \psi \rangle \quad \square$$

---

$$bc \cdot \psi = \psi_2 b_2 c_2 \langle b_1 c_1, \psi_1 \rangle \langle b_3 c_3, S\psi_3 \rangle$$




$$= \psi_3 b_2 c_2 \langle b_1, \psi_1 \rangle \langle c_1, \psi_2 \rangle \langle b_3, S\psi_5 \rangle \langle c_3, S\psi_4 \rangle$$


$$=$$