

7

2)

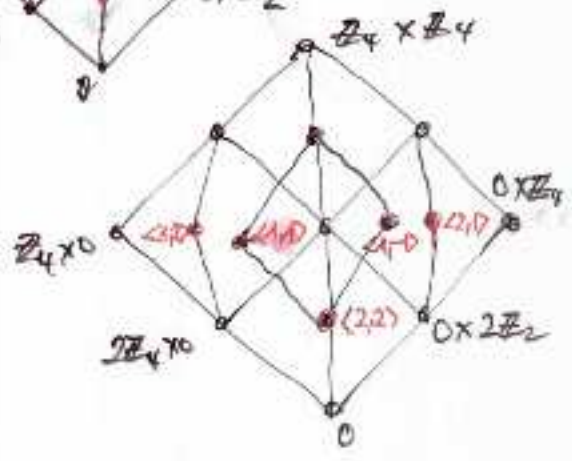
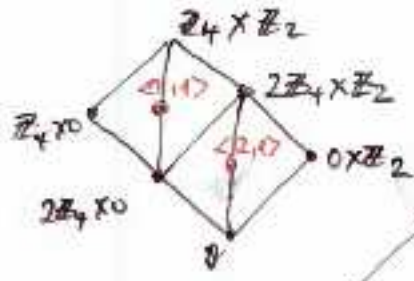
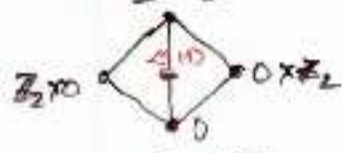
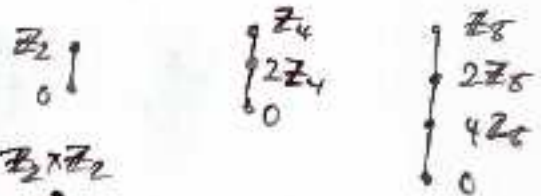
$$\begin{array}{ccccc} U & \xrightarrow{\alpha} & A & \hookrightarrow & \text{Aut}(N) \\ \exists \varphi \downarrow & & \downarrow \omega|_A & & \downarrow \omega \\ U & \xrightarrow{\beta} & B & \hookrightarrow & \text{Aut}(N) \end{array}$$

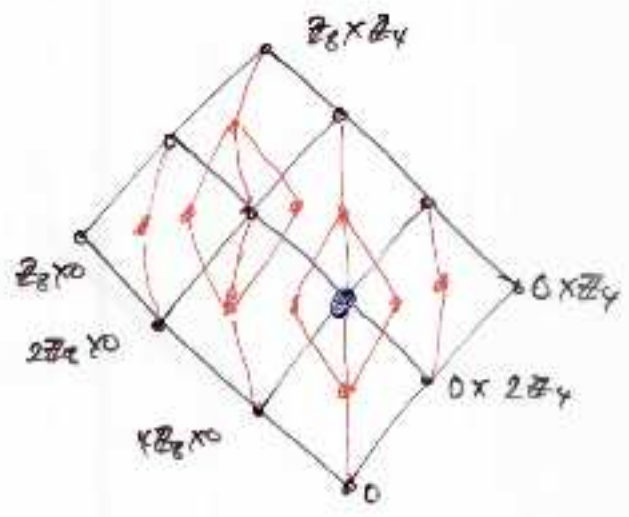
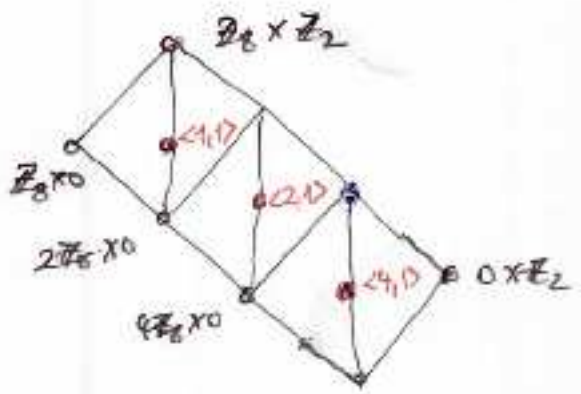
3)

$$\begin{array}{ccccc} U & \xrightarrow{\alpha} & A & \hookrightarrow & \text{Aut}(N) \\ & & \downarrow & & \downarrow \exists \omega \\ U & \xrightarrow{\beta} & B & \hookrightarrow & \text{Aut}(N) \end{array}$$

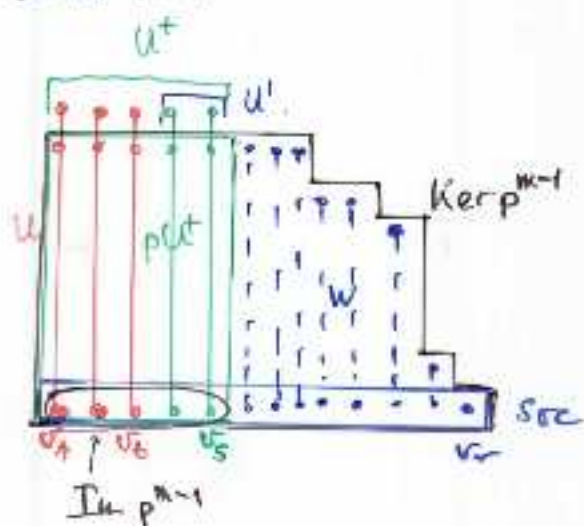
4) ans 2)

5) ans 2) + 4)





5. Jordan



$$\text{Ker } p^{m-1} = pU^+ \oplus W$$

$$\text{Sec } U^+ \cap \text{Sec } W = 0 \Rightarrow U^+ \cap W = 0$$

$$U^+ = U \oplus U'$$

$$A = U^+ + W$$

$$\begin{aligned} \dim A &= \dim \text{Im } p^{m-1} + \dim \text{Ker } p^{m-1} \\ &= \dim U^+ + \dim U' + \dim W \\ &= \dim U^+ + \dim W \end{aligned}$$