

1. 陈俊东 202113694

(1)  $\pi_{CLASS} (\Delta_{BNAME="西游记"} (B \bowtie L \bowtie S))$

(2)  $\pi_{BNAME} (\Delta_{CLASS=20} (S \bowtie L \bowtie B))$

(3)  $\pi_{B\#} (\Delta_{SNAME="小明"} (S \bowtie L) - \Delta_{SNAME="小芳"} (S \bowtie L))$

(4)  $\pi_{Amt} (Y_{S\#}; count(*) \rightarrow Amt (B \bowtie L))$

2.

(1)  $\Delta_{D\#="物理系"} (S)$

(2)  $\pi_{S\#, SNAME} (\Delta_{D\#="化学系"} (S))$

(3)  $\pi_{S\#} (\Delta_{C\#=1002} (SC) - \Delta_{C\#=1003} (SC))$

(4)  $\pi_{SNAME} (\Delta_{C\#=1002} (SC)) \cap \pi_{SNAME} (\Delta_{C\#=1003} (SC))$

(1)  $\pi_{S\#, SNAME} (S \bowtie SC)$

(2)  $\pi_{S\#, SNAME} (\Delta_{C\# \neq NULL} (S \bowtie SC))$

