


$$(1) \pi_{\text{SNO}}(\sigma_{\text{JNO}=\text{'J1'},(\text{SPJ})})$$



(2)

$\pi_{\text{SNO}}(\sigma_{\text{JNO}=\text{'J1'} \wedge \text{PNO}=\text{'P1'}, (\text{SPJ}))$

(3)

$\pi_{\text{SNO}}((\pi_{\text{SNO,PNO}}(\sigma_{\text{JNO}=\text{'J1'},(\text{SPJ})) \bowtie$

$\pi_{\text{PNO}}(\sigma_{\text{COLOR}=\text{'红'}, (P))))$

(4)

$\pi_{\text{JNO}}(\text{J}) - \pi_{\text{JNO}}(\pi_{\text{SNO}}(\sigma_{\text{CITY}=\text{'天津'}}(\text{S})) \bowtie$

$\pi_{\text{JNO,SNO,PNO}}(\text{SPJ}) \bowtie \pi_{\text{PNO}}(\sigma_{\text{COLOR}=\text{'红'}}(\text{P}))$

$\pi_{JNO}(J) - \pi_{JNO}(\pi_{SNO}(\sigma_{CITY='天津'}(S)))$

$\pi_{JNO,SNO,PNO}(SPJ)$

```
SQLQuery2.sql -...RJ5MB7\hust (54))* x
Select jno
From J
Where jno not in (
    Select jno
    From s, spj
    Where city='天津' and s.sno=spj.sno)
```

100 %

结果 消息

	jno
1	J5
2	J6
3	J7

$\pi_{JNO}(SPJ) - \pi_{JNO}(\pi_{SNO}(\sigma_{CITY='天津'}(S)))$

$\pi_{JNO,SNO,PNO}(SPJ)$

```
SQLQuery1.sql -...RJ5MB7\hust (59))* x
Select jno
From SPJ
Where jno not in (
    Select jno
    From s, spj
    Where city='天津' and s.sno=spj.sno)
```

100 %

结果 消息

	jno
1	J5

$\pi_{JNO}(\pi_{SNO}(\sigma_{CITY \neq \text{'天津'}}(S)) \bowtie \pi_{JNO, SNO}(SPJ))$

```
Select jno  
From spj, s  
Where s.sno=spj.sno and s.city<>'天津'
```

100 %

结果 消息

	jno
1	J1
2	J2
3	J4
4	J5
5	J1
6	J2
7	J1
8	J1
9	J4
10	J1
11	J2
12	J4

(5)

$$\pi_{\text{JNO,PNO}}(\text{SPJ}) \div \pi_{\text{PNO}}(\sigma_{\text{SNO}=\text{'S1'}}(\text{SPJ}))$$