

I Silas Davis declare that I have completed this assignment completely and entirely on my own, without any consultation with others. I understand that any breach of the UAB Academic Honor Code may result in severe penalties.

Silas Davis

1. PROF(A,B) R

A	B
1	2
1	2
2	3
3	1
2	2
2	3

RENAME

A	B
2	3
2	3
3	1
1	2
2	3
3	3

OUTPUT

1	2
2	3
3	1
2	3

2. A. It will hold it all since intersect is by considering complete topic, while on the other hand joins is more-so on the basis of common attribute.
 B. It will hold it all since R-S and S-R are mutually exclusive relations. R-S UNION S-R will give topic which are not common to both. R INTERSECTS goes give topic which is common to both R and S.
 C. Delta removes duplicates topic from relation R.
 D. It will not hold it all. Since R and S are not equal then their union will not be equal to R.

3. A. $\Pi_{\text{Shop_list.item}}(\sigma_{(\text{Person.age} > 18) \wedge (\text{Person.ID} = \text{Shop_list.ID})}(\text{Person} \times \text{Shop_list}))$
 B. $\Pi_{\text{Person.name}}(\sigma_{(\text{Person.gender} = \text{"male"}) \wedge (\text{Person.ID} = \text{Shop_list.ID})}(\sigma_{(\text{Sell.supermarket} = \text{"Walmart"}) \wedge (\text{Shop_list.item} = \text{sell.item})}(\text{Shop_list} \times \text{Sell})) \times \text{Person}))$
 C. $\Pi_{\text{Person.id, Shop_list.item, } \gamma \text{ min (Sell.price) as min_price}}(\sum_{\text{Person.ID} = \text{Shop_list.id} \wedge \text{Shop_list.item} = \text{Sell.item}}(\text{Person} \times \text{Shop_list} \times \text{Sell}))$