CS143 Homework#1:

1. Suppose relation $R(A, B, C)$ has the tuples:

A	B	C
7	5	3
2	1	2
1	4	3
5	8	7
6	7	9

and relation $S(A, B, C)$ has the tuples:

A	B	C
2	1	2
1	4	4
8	3	2
5	8	7

Compute $(R - S) \cup (S - R)$, often called the "symmetric difference" of R and S. List all the tuples in the result relation.

Answer:
(R – S) has the tuples:

A	B	C
7	5	5
1	4	3
6	7	9

(S – R) has the tuples:

A	B	C
1	4	4
8	3	2

(R – S) ∪ (S – R) has the tuples:

A	B	C
7	5	5
1	4	3
6	7	9
1	4	4
8	3	4

2. Suppose relation $R(L, M)$ has the tuples:

L	M
4	3
6	5
8	7

and relation $S(M, N, P)$ has the tuples:

M	N	P
6	1	8
1	6	4
2	5	1
3	4	7

Compute $\sigma_{R.L>S.M \wedge R.M<S.P}(R \times S)$. List all the tuples in the result relation.

(R × S) has the tuples:

L	R.M	S.M	N	P
4	3	6	1	8
4	3	1	6	4
4	3	2	5	1
4	3	3	4	7
6	5	6	1	8
6	5	1	6	4
6	5	2	5	1
6	5	3	4	7
8	7	6	1	8
8	7	1	6	4
8	7	2	5	1
8	7	3	4	7

σR.L>S.M∧R.M<S.P (R × S) has the tuples:

L	R.M	S.M	N	P
4	3	1	6	4
4	3	3	4	7
6	5	3	4	7
8	7	6	1	8