1. Intersects:

```
hive> SELECT tc.rec_id, td.rec_id FROM tc JOIN td ON (st_intersects(tc.outline, td.outline) = TRUE);
Total MapReduce jobs = 1
Launching Job 1 out of 1
Number of reduce tasks not specified. Estimated from input data size: 1
In order to change the average load for a reducer (in bytes):
  set hive.exec.reducers.bytes.per.reducer=<number>
In order to limit the maximum number of reducers:
  set hive.exec.reducers.max=<number>
In order to set a constant number of reducers:
  set mapred.reduce.tasks=<number>
Starting Job = job_201308131920_0002, Tracking URL = http://localhost:50030/jobdetails.jsp?jobid=job_201308131920_0002
Kill Command = /usr/local/hadoop-0.20.2/bin/../bin/hadoop job  -Dmapred.job.tracker=localhost:9001 -kill job_201308131920_0002
Hadoop job information for Stage-1: number of mappers: 2; number of reducers: 1
2013-08-13 19:24:06,018 Stage-1 map = 0%,  reduce = 0%
2013-08-13 19:24:12,062 Stage-1 map = 100%,  reduce = 0%
2013-08-13 19:24:21,118 Stage-1 map = 100%,  reduce = 100%
Ended Job = job_201308131920_0002
MapReduce Jobs Launched:
Job 0: Map: 2  Reduce: 1   HDFS Read: 191571 HDFS Write: 24 SUCCESS
Total MapReduce CPU Time Spent: 0 msec
OK
15      87
34      78
54      74
61      54
Time taken: 24.139 seconds
hive>
```

2. Touches:

```
hive> SELECT tc.rec_id, td.rec_id FROM tc JOIN td ON (st_touches(tc.outline, td.outline) = TRUE);
Total MapReduce jobs = 1
Launching Job 1 out of 1
Number of reduce tasks not specified. Estimated from input data size: 1
In order to change the average load for a reducer (in bytes):
  set hive.exec.reducers.bytes.per.reducer=<number>
In order to limit the maximum number of reducers:
  set hive.exec.reducers.max=<number>
In order to set a constant number of reducers:
  set mapred.reduce.tasks=<number>
Starting Job = job_201308131920_0005, Tracking URL = http://localhost:50030/jobdetails.jsp?jobid=job_201308131920_0005
Kill Command = /usr/local/hadoop-0.20.2/bin/../bin/hadoop job  -Dmapred.job.tracker=localhost:9001 -kill job_201308131920_0005
Hadoop job information for Stage-1: number of mappers: 2; number of reducers: 1
2013-08-13 20:16:21,890 Stage-1 map = 0%,  reduce = 0%
2013-08-13 20:16:27,941 Stage-1 map = 100%,  reduce = 0%
2013-08-13 20:16:33,984 Stage-1 map = 100%,  reduce = 100%
Ended Job = job_201308131920_0005
MapReduce Jobs Launched:
Job 0: Map: 2  Reduce: 1   HDFS Read: 190193 HDFS Write: 4 SUCCESS
Total MapReduce CPU Time Spent: 0 msec
OK
1       1
Time taken: 20.209 seconds
hive>
```

3. Crosses:

4. Contains:

```
hive> SELECT tc.rec_id, td.rec_id FROM tc JOIN td ON (st_contains(tc.outline, td.outline) = TRUE);
Total MapReduce jobs = 1
Launching Job 1 out of 1
Number of reduce tasks not specified. Estimated from input data size: 1
In order to change the average load for a reducer (in bytes):
  set hive.exec.reducers.bytes.per.reducer=<number>
In order to limit the maximum number of reducers:
  set hive.exec.reducers.max=<number>
In order to set a constant number of reducers:
  set mapred.reduce.tasks=<number>
Starting Job = job_201308131920_0017, Tracking URL = http://localhost:50030/jobdetails.jsp?jobid=job_201308131920_0017
Kill Command = /usr/local/hadoop-0.20.2/bin/../bin/hadoop job  -Dmapred.job.tracker=localhost:9001 -kill job_201308131920_0017
Hadoop job information for Stage-1: number of mappers: 2; number of reducers: 1
2013-08-13 22:03:07,282 Stage-1 map = 0%,  reduce = 0%
2013-08-13 22:03:16,351 Stage-1 map = 100%,  reduce = 0%
2013-08-13 22:03:22,401 Stage-1 map = 100%,  reduce = 100%
Ended Job = job_201308131920_0017
MapReduce Jobs Launched:
Job 0: Map: 2  Reduce: 1   HDFS Read: 187984 HDFS Write: 8 SUCCESS
Total MapReduce CPU Time Spent: 0 msec
OK
1       3
1       4
Time taken: 22.742 seconds
hive>
```

5. Adjacent:

```
hive> SELECT tc.rec_id, td.rec_id FROM tc JOIN td ON (st_adjacent(tc.outline, td.outline) = TRUE);
Total MapReduce jobs = 1
Launching Job 1 out of 1
Number of reduce tasks not specified. Estimated from input data size: 1
In order to change the average load for a reducer (in bytes):
  set hive.exec.reducers.bytes.per.reducer=<number>
In order to limit the maximum number of reducers:
  set hive.exec.reducers.max=<number>
In order to set a constant number of reducers:
  set mapred.reduce.tasks=<number>
Starting Job = job_201308131920_0009, Tracking URL = http://localhost:50030/jobdetails.jsp?jobid=job_201308131920_0009
Kill Command = /usr/local/hadoop-0.20.2/bin/../bin/hadoop job  -Dmapred.job.tracker=localhost:9001 -kill job_201308131920_0009
Hadoop job information for Stage-1: number of mappers: 2; number of reducers: 1
2013-08-13 21:28:38,475 Stage-1 map = 0%,  reduce = 0%
2013-08-13 21:28:44,512 Stage-1 map = 100%,  reduce = 0%
2013-08-13 21:28:50,561 Stage-1 map = 100%,  reduce = 100%
Ended Job = job_201308131920_0009
MapReduce Jobs Launched:
Job 0: Map: 2  Reduce: 1   HDFS Read: 189908 HDFS Write: 32 SUCCESS
Total MapReduce CPU Time Spent: 0 msec
OK
1       1
1       2
15      87
34      78
54      74
61      54
Time taken: 20.799 seconds
hive>
```

6. Disjoint:

```
99      75
99      76
99      77
99      78
99      79
99      80
99      81
99      82
99      83
99      84
99      85
99      86
99      87
99      88
99      89
99      90
99      91
99      92
99      93
99      94
99      95
99      96
99      97
99      98
99      99
Time taken: 22.55 seconds
hive>  SELECT tc.rec_id, td.rec_id FROM tc JOIN td ON (st_disjoint(tc.outline, td.outline) = TRUE);
```

7. Equals:

```
hive> SELECT tc.rec_id, td.rec_id FROM tc JOIN td ON (st_equals(tc.outline, td.outline) = TRUE);
Total MapReduce jobs = 1
Launching Job 1 out of 1
Number of reduce tasks not specified. Estimated from input data size: 1
In order to change the average load for a reducer (in bytes):
  set hive.exec.reducers.bytes.per.reducer=<number>
In order to limit the maximum number of reducers:
  set hive.exec.reducers.max=<number>
In order to set a constant number of reducers:
  set mapred.reduce.tasks=<number>
Starting Job = job_201308131920_0016, Tracking URL = http://localhost:50030/jobdetails.jsp?jobid=job_201308131920_0016
Kill Command = /usr/local/hadoop-0.20.2/bin/../bin/hadoop job  -Dmapred.job.tracker=localhost:9001 -kill job_201308131920_0016
Hadoop job information for Stage-1: number of mappers: 2; number of reducers: 1
2013-08-13 22:00:49,297 Stage-1 map = 0%,  reduce = 0%
2013-08-13 22:00:55,385 Stage-1 map = 100%,  reduce = 0%
2013-08-13 22:01:01,419 Stage-1 map = 100%,  reduce = 100%
Ended Job = job_201308131920_0016
MapReduce Jobs Launched:
Job 0: Map: 2  Reduce: 1   HDFS Read: 187984 HDFS Write: 4 SUCCESS
Total MapReduce CPU Time Spent: 0 msec
OK
1       3
Time taken: 20.716 seconds
hive>
```

8. D-Within:

```
hive> SELECT tc.rec_id, td.rec_id FROM tc JOIN td ON (st_dwithin(tc.outline, td.outline) = TRUE);
Total MapReduce jobs = 1
Launching Job 1 out of 1
Number of reduce tasks not specified. Estimated from input data size: 1
In order to change the average load for a reducer (in bytes):
  set hive.exec.reducers.bytes.per.reducer=<number>
In order to limit the maximum number of reducers:
  set hive.exec.reducers.max=<number>
In order to set a constant number of reducers:
  set mapred.reduce.tasks=<number>
Starting Job = job_201308131920_0012, Tracking URL = http://localhost:50030/jobdetails.jsp?jobid=job_201308131920_0012
Kill Command = /usr/local/hadoop-0.20.2/bin/../bin/hadoop job  -Dmapred.job.tracker=localhost:9001 -kill job_201308131920_0012
Hadoop job information for Stage-1: number of mappers: 2; number of reducers: 1
2013-08-13 21:38:57,387 Stage-1 map = 0%,  reduce = 0%
2013-08-13 21:39:03,417 Stage-1 map = 100%,  reduce = 0%
2013-08-13 21:39:11,458 Stage-1 map = 100%,  reduce = 100%
Ended Job = job_201308131920_0012
MapReduce Jobs Launched:
Job 0: Map: 2  Reduce: 1   HDFS Read: 189908 HDFS Write: 32 SUCCESS
Total MapReduce CPU Time Spent: 0 msec
OK
1       1
1       2
15      87
34      78
54      74
61      54
Time taken: 45.911 seconds
hive>
```

9. Within:

```
hive> SELECT tc.rec_id, td.rec_id FROM tc JOIN td ON (st_within(tc.outline, td.outline) = TRUE);
Total MapReduce jobs = 1
Launching Job 1 out of 1
Number of reduce tasks not specified. Estimated from input data size: 1
In order to change the average load for a reducer (in bytes):
  set hive.exec.reducers.bytes.per.reducer=<number>
In order to limit the maximum number of reducers:
  set hive.exec.reducers.max=<number>
In order to set a constant number of reducers:
  set mapred.reduce.tasks=<number>
Starting Job = job_201308131920_0013, Tracking URL = http://localhost:50030/jobdetails.jsp?jobid=job_201308131920_0013
Kill Command = /usr/local/hadoop-0.20.2/bin/../bin/hadoop job  -Dmapred.job.tracker=localhost:9001 -kill job_201308131920_0013
Hadoop job information for Stage-1: number of mappers: 2; number of reducers: 1
2013-08-13 21:40:18,208 Stage-1 map = 0%,  reduce = 0%
2013-08-13 21:40:24,241 Stage-1 map = 100%,  reduce = 0%
2013-08-13 21:40:30,279 Stage-1 map = 100%,  reduce = 100%
Ended Job = job_201308131920_0013
MapReduce Jobs Launched:
Job 0: Map: 2  Reduce: 1   HDFS Read: 189908 HDFS Write: 18 SUCCESS
Total MapReduce CPU Time Spent: 0 msec
OK
15      87
54      74
61      54
Time taken: 21.695 seconds
hive>
```

10. Overlaps:

```
hive> SELECT tc.rec_id, td.rec_id FROM tc JOIN td ON (st_overlaps(tc.outline, td.outline) = TRUE);
Total MapReduce jobs = 1
Launching Job 1 out of 1
Number of reduce tasks not specified. Estimated from input data size: 1
In order to change the average load for a reducer (in bytes):
  set hive.exec.reducers.bytes.per.reducer=<number>
In order to limit the maximum number of reducers:
  set hive.exec.reducers.max=<number>
In order to set a constant number of reducers:
  set mapred.reduce.tasks=<number>
Starting Job = job_201308131920_0014, Tracking URL = http://localhost:50030/jobdetails.jsp?jobid=job_201308131920_0014
Kill Command = /usr/local/hadoop-0.20.2/bin/../bin/hadoop job  -Dmapred.job.tracker=localhost:9001 -kill job_201308131920_0014
Hadoop job information for Stage-1: number of mappers: 2; number of reducers: 1
2013-08-13 21:41:21,578 Stage-1 map = 0%,  reduce = 0%
2013-08-13 21:41:27,614 Stage-1 map = 100%,  reduce = 0%
2013-08-13 21:41:32,651 Stage-1 map = 100%,  reduce = 100%
Ended Job = job_201308131920_0014
MapReduce Jobs Launched:
Job 0: Map: 2  Reduce: 1   HDFS Read: 189908 HDFS Write: 10 SUCCESS
Total MapReduce CPU Time Spent: 0 msec
OK
1       2
34      78
Time taken: 19.811 seconds
hive>
```