

Assignment 3

Question 1

1)

No, the road network in Sydney is not a metric space. It breaks the rule:

$$d(x,y) = d(y,x)$$

Having one-way roads means that $d(x,y)$ does not equal $d(y,x)$ since one of the sides does not exist (or is equal to zero depending on the definition of the 'edge', or road). Since not all conditions are satisfied, it is not a metric system.

2)

The query which satisfies the given 'where' conditions returns:

R				S			
r.x1	r.x2	r.y1	r.y2	s.x1	s.x2	s.y1	s.y2
1	3	2	6	2	5	5	7
2	5	5	7	4	7	4	8
4	7	4	8	6	9	3	9
6	9	3	9	8	10	1	5
6	9	3	9	8	10	6	10