



4. Consider the following Datalog program and database instance:

$rpath(x,y) \leftarrow Edge(x, y, red).$   
 $rpath(x,y) \leftarrow rpath(x,z), rpath(z,y).$

- (a) Exhibit a minimal fixedpoint and a non-minimal fixedpoint for  $rpath$ .
- (b) Treating the Datalog rules as logical sentences ( $\leftarrow$  being the logical *if*), exhibit a non-minimal model and a minimal model that satisfies these sentences.

Edge		
S	D	color
1	2	red
1	5	green
2	3	green
2	4	red
3	1	red
3	2	blue
3	4	green
4	1	red
5	3	red