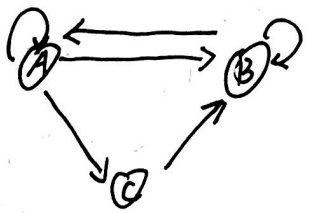
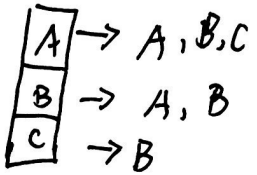
Q4:

	A	B	C
A	1	1	1
B	1	1	0
C	0	1	0

(a)



(b)



(c) There is only one vertices adjacent to C.

The run-time for adjacency matrix is $\Theta(V)$

The run-time for adjacency list is $O(V)$

This is because the vertices in adjacency list must smaller or equal than or equal with V^2, so, the upper-bound is $O(V)$. for question How many vertices are adjalcent to vertex C

The vertices in adjacency matrix is V^2, so it is $\theta(V)$

(b). adjacency list is better.

This is because it is a sparse graph, the run-time for answer q(1) approximates O(V)

but the run-time for answer q(1) is $\theta(V)$