Networks and security assignment 3

Exercise 1
a Source port 51000, destination port 53
For the source port we can pikck any of the dynamic/private port.
It is simply used to identify the session and should therefore be unique.
The destination port is designed by the protocols, DNS via UDP always uses port 53.

b Source port 51001, destination port 53
For the source port we can pikck any of the dynamic/private port.
It is simply used to identify the session and should therefore be unique.
In addition to this it can not be 51000, as that port is already used by a different session (multiplexing).
The destination port is designed by the protocols, DNS via UDP always uses port 53.

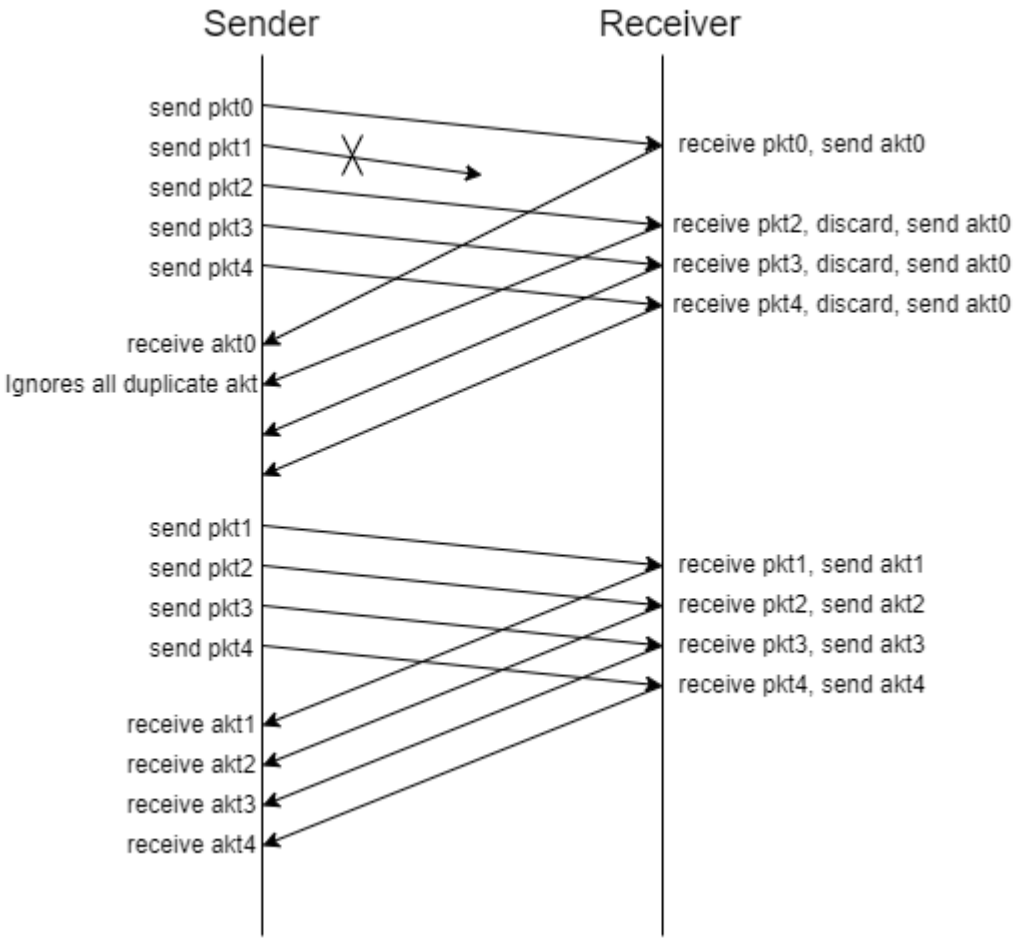
c Source port 53, destination port 51000
The package send back is very logical, we use the destination of earlier as source now and the source as dest.
This makes sense because the connection is reversed now, so the source and destination are reversed as well.
In addition to this we also keep using the unique session identifier.

d Source port 53, destination port 51001
The package send back is very logical, we use the destination of earlier as source now and the source as dest.
This makes sense because the connection is reversed now, so the source and destination are reversed as well.
In addition to this we also keep using the unique session identifier.

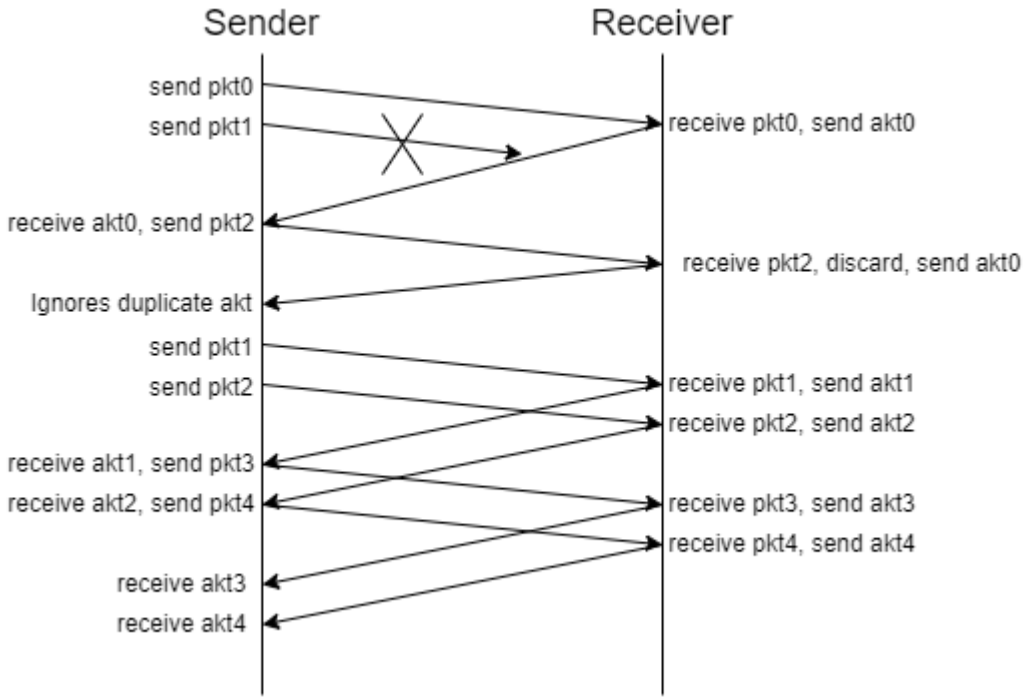
e Yes it does, if A and B are not the same host identifying by port is not valid anymore.
Because the hosts are unaware of each others port numbers used, they could both send a request with destination port 51000.
In this situation we have to not only use the port in multiplexing but also the ip adress, here the identifier is the combination
of ip address and port.

f It has two, as sockets are defined by the combination of ip and port, there are only 2 udp sockets in the server.

Exercise 2
a



b



c

In a) Host A sends 9 times and Host B sends 8 times. In b) Host A sends 7 times and Host B 6 times