Q1 (10 marks) Why is the assumption, that the delay from the server to the client is one half the RTT, not generally correct? Give two reasons.

Reason 1:
Because the response might not be following the same route as request. For example, if the client is located at China and the server is located as Canada. The request might went all the way through Pacific ocean to Canada, while the response from server might went across Atlantic Ocean and Europe back to China. Hence the travel time will not be the same.

Reason 2:
Traffic congestion – congestion is changed all the time. It may have congestion while sending the request and no congestion while server responses. In this case, delay from the server should not be easily treated as one half the RTT.

Q3 (15 marks) If the client does not receive a response from the server, what could be wrong? List two things that could be wrong, and explain how your program can cope with them gracefully; i.e., not just hang. There is no need to actually program your answer; just explain your approach.

Server could be down
Solution: Java RMI has built-in time out logic that after if it does not receive response from server after a certain time, a timeout exception will be thrown automatically. Since we use a try catch logic to implement the connection, a user-friendly message and the stack trace will be print to the user to help in troubleshooting.

Network congestion and time out
Solution: This will be handled by the same logic as above