1.

a)

**A-R1 (One packet)**

SA: A  
DA: B

**R1-R3 (Two packets due to MTU)**

Encrypt and ESP tunneled  
SA: R1  
DA: R3

**R3-B: Remain as 2 packets as there is no reassembly until it gets to the final destination**

Packets will be stripped and decrypted  
SA: A  
DA: B

b)

**A-R1 (One packet)**

SA: A  
DA: B

**R1-R2 (Two packets due to MTU)**

AH tunnel  
SA: R1  
DA: B

**R2-R3 (Still Two packets)**

encrypted and tunneled ESP  
SA: R2  
DA: R3

**R3-B (Still Two packets)**

Packets will be stripped and decrypted  
SA: R1  
DA: B

**2.**

* N+4 this packet is dropped since it has already been received
* N+2 –this packet is dropped since it has already been received
* N+8 –the packet is accepted after authentication
* N+19 –out of the window; therefore, window is advanced, if authenticated
* N+2 –this packet is dropped (if window were advanced, if not still dropped since N+2 was already received)