2.1: Give the WS frame number for a [SYN] TCP handshake packet sent to 3gpp.org.

* Answer: 13

2.1.1: Give the source IP address in this frame.

* Answer: 192.168.1.254

2.1.2: Is this source IP a public IP? Explain.

* Answer: No, it is a private IP because it falls in the range of 192.168.0.0 - 192.168.255.255.

2.2: Give the WS frame number for a DNS query response frame with an Answers field that has an IP address for 3gpp.org.

* Answer: 12

2.2.1: Give the source MAC address in this frame. Whose MAC address is this? Explain.

* Answer: The source MAC address is Apple\_64:e2:c5 (10:bd:3a:64:e2:c5). This MAC address belongs to my router. In a local network, when my device communicates with an external service/DNS server, the request first goes to my router. The router forwards the request to the DNS server, and when the DNS server responds, the router acts as the intermediary. Therefore, the MAC address seen in this frame is my router's because it was the last hop before delivering the response to my device.

2.2.2: Give the source IP address in this frame. Whose IP address is this? Explain.

* Answer: 192.168.1.1. This is the IP address that belongs to the local DNS server. My router acts as the local DNS server and forwards DNS queries and responses between my device and the external DNS server.

2.2.3: Name each protocol that appears in this frame and name the layer each protocol belongs to (use the Internet TCP/IP model in which the layer names are application, transport, network, link, physical).

* Answer:
  + Ethernet: Link layer
  + IP: Network layer
  + UDP: Transport layer
  + DNS: Application layer