Example Packet Decodes (v2) - Answer

Hexadecimal Dump of the Packet (packet may be truncated, i.e. the final bytes may be missing):

```
Ether:
0x0000   000a 957d 5f0c 00d0 bbf7 c6c1 0800

IP:
                                          4500
0x0010   0054 c87a 0000 3001 473f 3e92 e16d 8b85
0x0020   cf6a

ICMP:
             0000 777c

                       0291 0004 4083 9ab7 0007
0x0030   bfa9 0809 0a0b 0c0d 0e0f 1011 1213 1415
0x0040   1617 1819 1a1b 1c1d 1e1f 2021 2223 2425
0x0050   2627 2829 2a2b 2c2d 2e2f 3031 3233 3435
```

(1) Decode the Frame Header, providing the source and destination link addresses and the link layer Service Access Point (SAP)

ETHER: Destination = 00:0a:95:7d:5f:0c

ETHER: Source = 00:d0:bb:f7:c6:c1

ETHER: Ethertype = 0x800 (IP)

(2) Sketch the protocol headers, showing the protocol fields that indicate the type of the next header. Your answer should show all protocol headers,

<sketch should show IFG+Premamble+MAC_Frame+CRC32>
<with MAC_Frame consisting of DST+SRC+EtherType+MAC_Payload>
<and the Ethertype as 0x800 → IPv4>
<with IP packet carrying the IP_Header and IP_Payload>
<and IP protocol = ICMP>
<with IP_Payload consisting of ICMP Message>
<and ICMP message type = Echo Request>

(3) What type of message is carried?

An IPv4 ICMP Echo-Reply (TTL = 48)

(4) How many bytes in total were transmitted in the complete MAC frame (noting that captured frame may have been truncated)?

IP total length = 0x54 = 84 (decimal)
Ether = 84+14+4 = 102 (or 110 including preamble)
Length 110 at the Ethernet MAC Layer