```
   3 0.166237375   192.168.43.196    151.101.242.167   ICMP   66          Echo (ping) request
   4 0.169824098   192.168.43.1      192.168.43.196    ICMP   94          Time-to-live exceeded
   5 0.170035885   192.168.43.196    151.101.242.167   ICMP   66          Echo (ping) request
   6 0.189510213   10.143.255.254    192.168.43.196    ICMP   94          Time-to-live exceeded
   7 0.189726150   192.168.43.196    151.101.242.167   ICMP   66          Echo (ping) request
   8 3.192113396   192.168.43.196    151.101.242.167   ICMP   66          Echo (ping) request
  11 6.195342183   192.168.43.196    151.101.242.167   ICMP   66          Echo (ping) request
  16 9.216002659   192.168.43.196    151.101.242.167   ICMP   66          Echo (ping) request
  17 12.199312361  192.168.43.196    151.101.242.167   ICMP   66          Echo (ping) request
  18 15.202545913  192.168.43.196    151.101.242.167   ICMP   66          Echo (ping) request
  19 18.205840316  192.168.43.196    151.101.242.167   ICMP   66          Echo (ping) request
  20 21.209099342  192.168.43.196    151.101.242.167   ICMP   66          Echo (ping) request
  23 24.244038014  192.168.43.196    151.101.242.167   ICMP   66          Echo (ping) request
  24 27.215956065  192.168.43.196    151.101.242.167   ICMP   66          Echo (ping) request
  30 30.272040567  192.168.43.196    151.101.242.167   ICMP   66          Echo (ping) request
  33 33.219269739  192.168.43.196    151.101.242.167   ICMP   66          Echo (ping) request
  34 36.222521575  192.168.43.196    151.101.242.167   ICMP   66          Echo (ping) request
  37 39.276029806  192.168.43.196    151.101.242.167   ICMP   66          Echo (ping) request
  38 42.248045822  192.168.43.196    151.101.242.167   ICMP   66          Echo (ping) request
  39 45.230558359  192.168.43.196    151.101.242.167   ICMP   66          Echo (ping) request
  40 48.233819852  192.168.43.196    151.101.242.167   ICMP   66          Echo (ping) request
  41 51.237075219  192.168.43.196    151.101.242.167   ICMP   66          Echo (ping) request
  42 51.307706436  151.101.242.167   192.168.43.196    ICMP   66          Echo (ping) reply
  52 67.321611363  192.168.43.196    134.209.173.239   ICMP   602         Echo (ping) request
```

1) 21 ICMP echo requests traceroute send. Until frame 41 they are incrementing one by one after frame 42 which is reply (its ttl value is 44) reply ttl value. Last one(Frame-52 destination address is different) is 64)

2) There are two. First one (Frame 4) source ip address is --> 192.168.43.1
   Second one (Frame 6) is --> 10.143.255.254 When the time-to-live exceed error occur I encountered their ip addresses on prompt.

3) When a source end system wants to send a packet to a destination end system, the source includes the destination's IP address in the packet's header. When a packet arrives at a router in the network, the router examines a portion of the packet's destination address and forwards the packet to an adjacent router. Each router has a forwarding table that maps destination addresses (or portions of the destination addresses) to that router's outbound links. When a packet arrives at a router, the router examines the address and searches its forwarding table, using this destination address, to find the appropriate outbound link. The router then directs the packet to this outbound link. No, route does not be same always. When the packet reaches a router, it looks at the forwarding table and finds a shorter path than the forwards it that path. So, if it is possible to find another path shorter than the before one then that route will be used.

4) IP header length --> 20bytes
   Total Length --> 85

5) For UDP communication -->17

   For ICMP communication -->1

```
4 IPv4 Fragments (5008 bytes): #49(1480), #50(1480), #51(1480), #52(568)]
  [Frame: 49, payload: 0-1479 (1480 bytes)]
  [Frame: 50, payload: 1480-2959 (1480 bytes)]
  [Frame: 51, payload: 2960-4439 (1480 bytes)]
  [Frame: 52, payload: 4440-5007 (568 bytes)]
  [Fragment count: 4]
```

6) Yes. Four fragments are used. Because network layer divides the datagram received from transport layer into fragments so that data flow is not disrupted. We send the size of 5000 bytes ping. And the total length a frame is 1500 byte as we saw in frame 49 (1480-byte data 20-byte header). So, ping is divided four fragments.