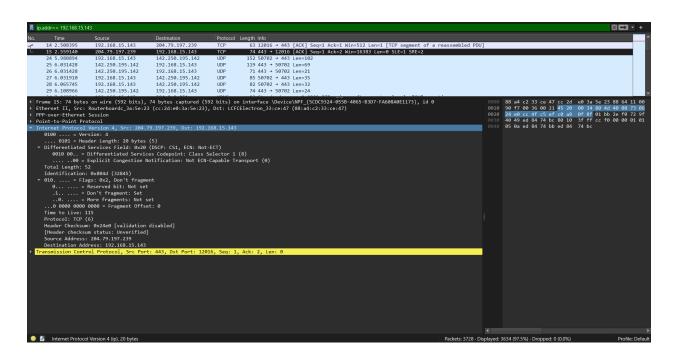
Q. Capture an IPv4 packet in wireshark, list out all of the fields and their values. Calculate the checksum.



```
Internet Protocol Version 4, Src: 204.79.197.239, Dst: 192.168.15.143
  0100 .... = Version: 4
  .... 0101 = Header Length: 20 bytes (5)
Differentiated Services Field: 0x20 (DSCP: CS1, ECN: Not-ECT)
     0010 00.. = Differentiated Services Codepoint: Class Selector 1 (8)
     .... ..00 = Explicit Congestion Notification: Not ECN-Capable Transport (0)
  Total Length: 52
  Identification: 0x804d (32845)

▼ 010. .... = Flags: 0x2, Don't fragment
     0... = Reserved bit: Not set
     .1.. .... = Don't fragment: Set
     ..0. .... = More fragments: Not set
   ...0 0000 0000 0000 = Fragment Offset: 0
  Time to Live: 115
  Protocol: TCP (6)
  Header Checksum: 0x24e0 [validation disabled]
  [Header checksum status: Unverified]
  Source Address: 204.79.197.239
  Destination Address: 192.168.15.143
```

```
Capture aspecket in wireshowk & calculate the checkson
    The captured packed is shown above:
    The fields and their values are: (In hex)
 1) Version: 4
   Header length: 5
    Differentiated services (de Point CDSCP): 20
    Explicit congestion Notification: 00
    Identification: 804d
     Flags: a ( non'd fragment) asoo -
    Time to Live; 73
     Protocol: 06 (TCP)
 10) Header checksum; 0000 (for calculation)
     Source address : ce: 4f: es: ef
 22)
 12) Destination address: Co: a8: of: 84
  Now, we coment all of the fields value to binary
and divide each of them to 16 bits & calculate Fe
 som of the values one by one Loading the carry over back to the LSB of the sum (If there's carry).
  Now, the bits are !-
    4520 = 01000101001000000 3+6
   0034 = 60000000000120100
   804d = 10000000010011013+
   7306 = 01110011000001207+6
   ccuf = 1100 1100 0100 7117
   CSef = 1100010111101111
   coa8 = 1100 000010101000
   of8f = 0000 11111 0001111
Here, sum is 3 pB1C, Now adding comy to LSB weget,
  DBIF, Now, I's complement ist 2480 which is check
```