1. Find out your public IP: Go online and type [https://whatismyipaddress.com.](https://whatismyipaddress.com./) Compare the result with a colleague. What conclusions can you draw?

The conclusion of both have the same IP’s is that both are in the same red

1. Using shell commands, display the network settings of your current computer and answer the questions:
   * What is your IP address? Is it public or private?
   * What is your mask?
   * What is your gateway?
   * What are your DNS servers?
2. Explain what it's for:
   * The IP address
   * The netmask
   * The gateway
   * DNS servers
3. Enter your IP in CIDR format and in IP format with netmask. What is your network address? Which broadcast? How many hosts can be assigned on that network?
4. Which is equivalent of this IPv6 address -1234:2001:acbc:0001:0004:0000:1234:0000

o 1234:201:acbc:1:4:0:1234::

o 1234:2001:acbc:1:4::1234:0

o 1234:2001:acbc:1:4::1234::

o 1234:21:acbc:1:4::1234:0

Which is equivalent of this IPv6 address - 5030:0101:00ac:0001:4001:0000:0000:0000

o 5030:11:00ac:0001:4001:0000:0000:0000

o 5030:101:ac:1:4001::

o 5030:11:00ac:1:4001::

o 5030:0101:AM:1:41::

Which is equivalent of this IPv6 address - 0000:0000:0000:0000:abcd:0000:0000:0000

* :0:abcd::
* ::abcd:0:0

o ::abcd:0:0:0

::abcd::

1. Set up your Linux VM, with a network card in bridge mode. Configure the card graphically in DHCP. Do you have Internet access? What is the configuration that the card receives? Show it and explain it.
2. Configure your Linux VM with a network card in NAT mode. Configure the card graphically in DHCP. Do you have Internet access? What is the configuration that the card receives? Show it and explain it.
3. Search the Internet for information about Cat5e, Cat6, Cat6e, Cat7, Cat7e and Cat8 categories indicating their bandwidth and maximum distance. Write a table with the results.
4. Search the Internet for Ethernet versions for coaxial, twisted pair, and fiber optic cables. Specifies their bandwidth.
5. Search the Internet for the meaning of the following standards: 100BaseT, 100BaseFX and 10GBASE-T.
6. Search the Internet for information about the Wi-Fi standards studied, as well as 802.11ad, 802.11af, and 802.11ax. Create a table describing its working band (frequency), range, and maximum theoretical bandwidth.
7. Install Wireshark on your virtual machine <https://itsfoss.com/install-wireshark-ubuntu/>. Scan network traffic and upload a screenshot of at least one packet you “sniffed” indicating what you find on it.
8. On Windows and Ubuntu, access the Windows Task Manager and System Monitor, respectively, by navigating through their various options and familiarizing yourself with them. (In this activity you do not have to deliver anything)