1. A general protocol defines a set of rules in a specified order between two or more interacting entities. For instance, when students scan their zag cards to enter buildings, its actually an exchange of information between the card reader which communicates to some backend system and the rfid unique serial tag which uses a form of security protocol to make sure you're allowed to be here and denies access if not.

| Application |
| Transport |
| Network |
| Link |
| Physical |
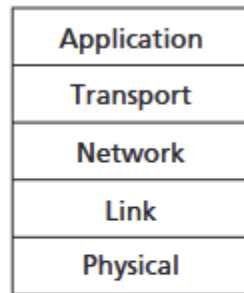
Five-layer Internet protocol stack

2.

Role: Facilitates communication between software applications and the underlying network.
Role: Ensures reliable data transfer between devices, managing segmentation, error checking, and data flow.
Role: Handles logical addressing and routing, enabling data to traverse multiple networks.
Role: Handles the physical transmission of data over the hardware medium.
Role: The Physical Layer transmits raw data as signals over a physical medium and manages hardware connections.

3. There are 32 bits in an IPv4 address
   There are 128 bits in an IPv6 address

4. There are 48 bits in a MAC address