Calculating Subnet Information

For a host with address configuration \(5.228.229.195/27\), list the following:

- Binary representation:
- Network address.
- Subnet broadcast address.
- Range of host addresses.

For a host with address configuration \(192.4.4.67/23\), list the following:

- Binary representation:
- Network address.
- Subnet broadcast address.
- Range of host addresses.
FORWARDING TABLE LOOKUPS

Which of the following addresses matches this prefix?

- **PREFIX**: 32.0.0.0/4
- **ADDRESSES**
  - 110.119.22.0
  - 46.209.10.0
  - 5.0.1.0
  - 33.33.1.0
  - 96.21.3.0

Which of the following IP prefixes does the IP address match? Which prefix would be used to forward a packet with this address?

- **ADDRESS**: 95.254.36.0
- **PREFIXES**
  - 95.254.46.0/20
  - 95.254.37.0/24
  - 95.254.36.0/24
  - 95.254.40.0/23

Which of the prefixes in the list contains both addresses?

- **ADDRESSES**
  - 229.65.47.0
  - 229.65.56.0
- **PREFIXES**
  - 229.65.32.0/20
  - 229.65.49.0/20
  - 229.65.37.0/19
  - 229.65.35.0/21
Using UCSC’s prefix (128.114.0.0/16) develop an addressing plan for the following network diagram that allows each router to advertise a single summary route to routers at an equal or higher level in the hierarchy. Assume /24 subnets. For your answer list the (single) route advertised by each router (A-H).
Subnet overlapping: can there be two different but overlapping IP address ranges, defined using the `<address>/<mask length>` notation, where neither contains the other? Prove your answer (if you say yes, give an example; if you say no, give a proof).