

# Homework Networking

Due November 7, 2022

## Problem 1:

What is the subnet broadcast address of a host with IP and network mask 134.48.171.209/27? Show your work. You can check your work using an IP subnet calculator on the web.

## Problem 2:

Given the following routing table, decide the (longest prefix first) routing

IP Address	Port
10.190.210.0/28	A
10.190.210.32/25	B
10.190.208.0 /22	C
10.160.0.0/12	D
10.240.0.0/14	E
10.190.208.16/29	F

Find and explain the routing for IP packets with destination address

- (a) 10.190.208.22
- (b) 10.242.210.42
- (c) 10.190.209.100
- (d) 10.190.210.55
- (e) 10.190.208.13.

## Problem 3:

Using **classfull addressing**, find the class, the subnet and the host part of the following addresses, and the number of hosts in the subnet. The addresses and network masks are

- (a) 8.1.4.5, 255.255.254.0
- (b) 130.4.102.1, 255.255.255.0
- (c) 199.1.1.100, 255.255.255.224

## Problem 4:

IPv6 subnetting is not about using the address space well, but about organizing network addresses to reflect administrative hierarchies. You have been assigned to generate 8 subnets in the IPv6 subnet with network mask 2800:a4:1600:d300:/56. You are to use the first three bits from the left in order to define the subnets. What are their IPv6 addresses?