

## ANC4 Tutorial 2

1. The header checksum of an IP packet must be recomputed at every router. Why?
2. Why are layer 2 addresses not suitable for routing?
3. Why are the problems associated with PMTU black holes often intermittent?
4. What are the advantages and disadvantages of TCP MSS clamping?
5. Why is TCP MSS clamping normally implemented at edge networks, such as at a client's *customer edge* (CE) router (the router at the customer end of the ISP link)?
6. A host newly attached to a LAN is booted for the first time. In order to communicate using TCP/IP what items of information does it need to be provided with?
7. Explain why a network using private addresses is protected from external access?
8. Suppose it is desired to run a web server on a private address LAN. How can such a server be made available to external clients.
9. What Class of network is 130.209.0.0?
10. To divide the network above into 4 equal subnets, what mask is required?
11. Show a design for (10) showing routers and outlining the forwarding tables they would require.
12. Why might subnetting be advantageous in such a network?
13. Can hosts belonging to different subnets exist on the same LAN segment?
14. What advantage does the pseudo-header confer in terms of a TCP connection?
15. Is it possible to divide a network up into subnets of different sizes?
16. H is a host on network N. Is it possible for an Internet router to select a different route for packets targeted at H from packets addressed to any other host on N? Explain?
17. Does it make sense to have two IP addresses attached to the same network interface card with a single MAC address?
18. Suppose a network has number N and Mask M of length  $n$  ( $n - 1$  bits). If a host on the network is accidentally allocated a mask one bit too short ( $n-1$ , 1s) what will happen? What if the mask is one bit too long ( $n + 1$ , 1s)?