

Quiz 2

1. 11-12
2. a. 80
b. 40
3. 2046/2048: 5 bits are needed for the host part, that leaves 11 bits for the subnet part. It is $2^{11} = 2048$, but normally all zeros and all ones are not used, so that gives 2046
4. In the DV table, we would now have the three columns as: <destination,best-bottleneck-capacity, nexthop>. And a node will advertise the first two entries. When a node B receives a DV update from its neighbour A, specific to a given destination X, it does the following:
 - Capacity of path to X via A = $\min\{\text{capacity of B to A, capacity of A to X (specified in the advertisement)}\}$
 - If above calculated capacity is less than minimum threshold, discard the advertisement. Exit
 - Otherwise, B updates its own DV entry for X if this newly calculated capacity is higher than the already stored capacity for destination X.
 - If such an update were to happen, the next hop for X would be set to A
5. H1->R1: No fragmentation
R1->R2: $488 * 3 + 16 (=1480 \text{ total payload})$ (total 4 packets)
R2->R3: No further fragmentation
R3->R4: 3 packets will be fragmented into 360 and 128; last stays the same
<M Bit; Off set; IP Payload> :
 - 1 0 360
 - 1 45 128
 - 1 61 360
 - 1 106 128
 - 1 122 360
 - 1 167 128
 - 0 183 16
 - a. 7
 - b. 1 0 360
 - c. 1 106 128
 - d. 0 183 16