You have 15 minutes to complete this quiz.

Name: _____

RIT Username: _____

Problem	Possible	Score

1a. For the following IP addresses, give their class (A, B, or C) and their representation in binary: 129.10.115.10, 4.3.2.129, 220.33.9.21. (Hint: The prefix of class A is 0, Class B is 10, and Class C is 110.) (5 pts)

```
129.10.115.10:  Class B, 10000001 00001010 01110011 00001010
4.3.2.129:  Class A, 00000100 00000011 00000010 100000001
220.33.9.21:  Class C, 11011100 00100001 00001001 00010101
```

1b. The binary representation of 128.42.5.4 is shown below.

10000000 00101010 00000101 00000100

If the subnet mask is 255.255.248.0, label the bits that correspond to the (a) class prefix, (b) the network number, (c) the subnet number, and (d) the host number. (10 pts)

```
Class prefix:  10
Network number:  000000 00101010
Subnet number:  00000
Host number:  101 00000100
```

3. Suppose you have a router where the routing entries are populated as below:

Address Pattern	Subnet Mask	Destination Router
0.0.0.0	0.0.0.0	Router 4
18.0.0.0	255.0.0.0	Router 2
128.42.0.0	255.255.0.0	Router 3
128.42.128.0	255.255.128.0	Router 5
128.42.222.0	255.255.255.0	Router 1

If one packet whose destination address is 128.42.222.198 comes to your router, (1) which routing entries are matched, (2) which router do you ultimately choose to forward, and (3) why? (15 pts)

Router 4/3/5/1 and choose Router 1 to forward because of Longest prefix matching