Task 1)

LAN A: (0-64)
Subnet Mask: 255.255.255.64/26

Network Address: 20.10.172.0

Smallest IP: 20.10.172.1

Largest IP: 20.10.172.63

LAN B: (64-191)
Subnet Mask: 255.255.255.128/25

Network Address: 20.10.172.64

Smallest IP: 20.10.172.65

Largest IP: 20.10.172.191

LAN C: (192 - 223)
Subnet Mask: 255.255.255.224/27

Network Address: 20.10.172.192

Smallest IP: 20.10.172.192

Largest IP: 20.10.172.223

Task 2)

Here I create 3 Switches for each Lan:

```
def build( self ):
    sA = self.addSwitch('sA')  # LAN A (0/63)
    sB = self.addSwitch('sB')  # LAN B (64/191)
    sC = self.addSwitch('sC')  # LAN C (192/223)
```

Than I link each host to its respective switch:

```
    #LAN A
    hA1 = self.addHost('hA1', ip='20.10.172.1/26') #Set to the smallest IP for Lan A
    hA2 = self.addHost('hA2', ip='20.10.172.63/26') #Set to the largest IP for Lan A

    #LAN B
    hB1 = self.addHost('hB1', ip='20.10.172.65/25') #Set to the smallest IP for Lan B
    hB2 = self.addHost('hB2', ip='20.10.172.191/25') #Set to the largest IP for Lan B


    #Lan C (Need to make sure right ranges later aayan)
    hC1 = self.addHost('hC1', ip='20.10.172.192/27') #Set to the smallest IP for Lan C
    hC2 = self.addHost('hC2', ip='20.10.172.223/27') #Set to the largest IP for Lan C

    #connect each host to its switch
    for host, switch in [
        (hB1, sB), (hB2, sB),
        (hA1, sA), (hA2, sA),
        (hC1, sC), (hC2, sC)
    ]:
        self.addLink(host, switch)
```

Then Run the Pings to test networks:

```
def runTest():
    setLogLevel('info')
    topo = Layer3Topo()
    net = Mininet(topo=topo, controller=None)
    net.start()

    # Ping between hB1 and hB2
    net.ping([ net.get('hB1'), net.get('hB2') ])
    # Ping between hA1 and hA2
    net.ping([ net.get('hA1'), net.get('hA2') ])
    # Ping between hC1 and hC2
    net.ping([ net.get('hC1'), net.get('hC2') ])
    net.pingAll()
    CLI(net)
    net.stop()

if __name__ == '__main__':
    runTest()
```