Area 1 Network Information

1. 24 for the default subnet mask, 1 to separate 2 subnets, $2^{(32-25)} = 128$. 2 ip addresses are reserved for network and broadcasting so in total each subnet will have 126 ip addresses.
2. 1 bit
3. Subnet mask for Subnet 1: 255.255.255.128
4. Network address of Subnet 1: 192.168.1.0
5. Broadcast address of Subnet 1: 192.168.1.127
6. Network address of Subnet 2: 192.168.1.128
7. Broadcast address of Subnet 2: 192.168.1.255
8. New subnet mask for Subnet 2: 255.255.255.128
9. Assigned IP address to Router 0 Point 1: not set, instead 0/10: 192.168.1.1 and 0/20: 192.168.1.129
10. Default gateways of Area 1: 192.168.1.1, 192.168.1.129

Area 2 Network Information

1. 24 for the default subnet mask, 1 to separate 2 subnets, $2^{(32-25)} = 128$. 2 ip addresses are reserved for network and broadcasting so in total each subnet will have 126 ip addresses.
2. 1 bit
3. Subnet mask for Subnet 1: 255.255.255.128
4. Network address of Subnet 1: 192.168.2.0
5. Broadcast address of Subnet 1: 192.168.2.127
6. Network address of Subnet 2: 192.168.2.128
7. Broadcast address of Subnet 2: 192.168.2.255
8. New subnet mask for Subnet 2: 255.255.255.128
9. Assigned IP address to Router 0 Point 2: not set, instead 0/10: 192.168.2.1 and 0/20: 192.168.2.129
10. Default gateways of Area 2: 192.168.2.1, 192.168.2.129

Area 3 Network Information

1. 24 for the default subnet mask, 1 to separate 2 subnets, $2^{(32-25)} = 128$. 2 ip addresses are reserved for network and broadcasting so in total each subnet will have 126 ip addresses.
2. 1 bit
3. Subnet mask for Subnet 1: 255.255.255.128
4. Network address of Subnet 1: 192.168.3.0
5. Broadcast address of Subnet 1: 192.168.3.127
6. Network address of Subnet 2: 192.168.3.128
7. Broadcast address of Subnet 2: 192.168.3.255
8. New subnet mask for Subnet 2: 255.255.255.128

9. Assigned IP address to Router 0 Point 2: not set, instead 0/10: 192.168.3.1 and 0/20: 192.168.3.129
10. Default gateways of Area 3: 192.168.3.1, 192.168.3.129

Area 4 Network Information

1. 24 for the default subnet mask, 1 to separate 2 subnets, 2^(32 - 25) = 128. 2 ip addresses are reserved for network and broadcasting so in total each subnet will have 126 ip addresses.
2. 1 bit
3. Subnet mask for Subnet 1: 255.255.255.128
4. Network address of Subnet 1: 192.168.4.0
5. Broadcast address of Subnet 1: 192.168.4.127
6. Network address of Subnet 2: 192.168.4.128
7. Broadcast address of Subnet 2: 192.168.4.255
8. New subnet mask for Subnet 2: 255.255.255.128
9. Assigned IP address to Router 0 Point 2: not set, instead 0/10: 192.168.4.1 and 0/20: 192.168.4.129
10. Default gateways of Area 4: 192.168.4.1, 192.168.4.129

Area 5 Network Information

1. Network address of the subnet: 192.168.6.0
2. Broadcast address of the subnet: 192.168.6.255
3. Assigned IP address to Router 0 Point 2: 192.168.6.1
4. New subnet mask for Router 0 Point 2: 255.255.255.0
5. Assigned IP address to Router 1 Point 1: 192.168.6.2
6. New subnet mask for Router 1 Point 1: 255.255.255.0

Area 6 Network Information

1. Network address of the subnet: 192.168.7.0
2. Broadcast address of the subnet: 192.168.7.255
3. Assigned IP address to Router 1 Point 3: 192.168.7.1
4. New subnet mask for Router 1 Point 3: 255.255.255.0
5. Assigned IP address to Router 2 Point 1: 192.168.7.2
6. New subnet mask for Router 2 Point 1: 255.255.255.0

Area 7 Network Information

1. Network address of the subnet: 192.168.8.0
2. Broadcast address of the subnet: 192.168.8.255
3. Assigned IP address to Router 2 Point 3: 192.168.8.1
4. New subnet mask for Router 2 Point 3: 255.255.255.0
5. Assigned IP address to Router 3 Point 1: 192.168.8.2

6. New subnet mask for Router 3 Point 1: 255.255.255.0

From Area 4 to Area 1

```
C:\>ipconfig

FastEthernet0 Connection:(default port)

    Connection-specific DNS Suffix..:
    Link-local IPv6 Address.........: FE80::260:47FF:FE4E:C558
    IPv6 Address....................: ::
    IPv4 Address....................: 192.168.4.2
    Subnet Mask.....................: 255.255.255.128
    Default Gateway.................: ::
                                      192.168.4.1

Bluetooth Connection:

    Connection-specific DNS Suffix..:
    Link-local IPv6 Address.........: ::
    IPv6 Address....................: ::
    IPv4 Address....................: 0.0.0.0
    Subnet Mask.....................: 0.0.0.0
    Default Gateway.................: ::
                                      0.0.0.0

C:\>ping 192.168.1.132

Pinging 192.168.1.132 with 32 bytes of data:

Reply from 192.168.1.132: bytes=32 time<1ms TTL=124
Reply from 192.168.1.132: bytes=32 time<1ms TTL=124
Reply from 192.168.1.132: bytes=32 time<1ms TTL=124
Reply from 192.168.1.132: bytes=32 time<1ms TTL=124

Ping statistics for 192.168.1.132:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

In Area 4, from subnet 1 to subnet 2

```
C:\>ipconfig

FastEthernet0 Connection:(default port)

   Connection-specific DNS Suffix..:
   Link-local IPv6 Address..........: FE80::260:47FF:FE4E:C558
   IPv6 Address.....................: ::
   IPv4 Address.....................: 192.168.4.2
   Subnet Mask......................: 255.255.255.128
   Default Gateway..................: ::
                                      192.168.4.1

Bluetooth Connection:

   Connection-specific DNS Suffix..:
   Link-local IPv6 Address..........: ::
   IPv6 Address.....................: ::
   IPv4 Address.....................: 0.0.0.0
   Subnet Mask......................: 0.0.0.0
   Default Gateway..................: ::
                                      0.0.0.0

C:\>ping 192.168.4.132

Pinging 192.168.4.132 with 32 bytes of data:

Reply from 192.168.4.132: bytes=32 time<1ms TTL=127
Reply from 192.168.4.132: bytes=32 time<1ms TTL=127
Reply from 192.168.4.132: bytes=32 time<1ms TTL=127
Reply from 192.168.4.132: bytes=32 time<1ms TTL=127

Ping statistics for 192.168.4.132:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

From Area 2 to Area 3

```
C:\>ipconfig

FastEthernet0 Connection:(default port)

   Connection-specific DNS Suffix..:
   Link-local IPv6 Address.........: FE80::201:C9FF:FE35:898C
   IPv6 Address....................: ::
   IPv4 Address....................: 192.168.2.2
   Subnet Mask.....................: 255.255.255.128
   Default Gateway.................: ::
                                     192.168.2.1

Bluetooth Connection:

   Connection-specific DNS Suffix..:
   Link-local IPv6 Address.........: ::
   IPv6 Address....................: ::
   IPv4 Address....................: 0.0.0.0
   Subnet Mask.....................: 0.0.0.0
   Default Gateway.................: ::
                                     0.0.0.0

C:\>ping 192.168.3.130

Pinging 192.168.3.130 with 32 bytes of data:

Reply from 192.168.3.130: bytes=32 time<1ms TTL=126
Reply from 192.168.3.130: bytes=32 time<1ms TTL=126
Reply from 192.168.3.130: bytes=32 time=1ms TTL=126
Reply from 192.168.3.130: bytes=32 time<1ms TTL=126

Ping statistics for 192.168.3.130:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 1ms, Average = 0ms
```

In Area 2, from subnet 1 to subnet 2

```
C:\>ipconfig

FastEthernet0 Connection:(default port)

   Connection-specific DNS Suffix..:
   Link-local IPv6 Address.........: FE80::201:C9FF:FE35:898C
   IPv6 Address....................: ::
   IPv4 Address....................: 192.168.2.2
   Subnet Mask.....................: 255.255.255.128
   Default Gateway.................: ::
                                     192.168.2.1

Bluetooth Connection:

   Connection-specific DNS Suffix..:
   Link-local IPv6 Address.........: ::
   IPv6 Address....................: ::
   IPv4 Address....................: 0.0.0.0
   Subnet Mask.....................: 0.0.0.0
   Default Gateway.................: ::
                                     0.0.0.0

C:\>ping 192.168.2.130

Pinging 192.168.2.130 with 32 bytes of data:

Reply from 192.168.2.130: bytes=32 time=3ms TTL=127
Reply from 192.168.2.130: bytes=32 time<1ms TTL=127
Reply from 192.168.2.130: bytes=32 time=13ms TTL=127
Reply from 192.168.2.130: bytes=32 time<1ms TTL=127

Ping statistics for 192.168.2.130:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 13ms, Average = 4ms
```