

Exercise 1

Part A

1. 208.230.197.239/24

Address in binary: **11010000.11100110.11000101.11101111**

- a) Network address: 208.230.197.0
- b) Broadcast address: 208.230.197.255
- c) Range of available hosts: $2^8 - 2 = 254$ hosts
Available hosts → from 208.230.197.1 to 208.230.197.254
- d) Mask: 255.255.255.0

2. 28.31.250.10/26

Address in binary: **00011100.00011111.11111010.00001010**

- a) Network address: 28.31.250.0
- b) Broadcast address: 28.31.250.63
- c) Range of available hosts: $2^6 - 2 = 62$ hosts
Available hosts → from 28.31.250.1 to 28.31.250.62
- d) Mask: 255.255.255.192

3. 219.103.31.128/25

Address in binary: **11011011.01100111.00011111.10110110**

- a) Network address: 219.103.31.128
- b) Broadcast address: 28.31.250.255
- c) Range of available hosts: $2^7 - 2 = 126$ hosts
Available hosts → from 219.103.31.129 to 219.103.31.254
- d) Mask: 255.255.255.128

Part B

IP 208.230.197.239/24

Address in binary → **11010000.11100110.11000101.11101111**

Subnet 1:

- a) Network address: 208.230.197.0/26
- b) Broadcast address: 208.230.197.63
- c) Range of available hosts: $2^6 - 2 = 62$ hosts
Available hosts → from 208.230.197.1 to 208.230.197.62
- d) Mask: 255.255.255.192

Subnet 2:

- a) Network address: 208.230.197.64/26
- b) Broadcast address: 208.230.197.127
- c) Range of available hosts: $2^6 - 2 = 62$ hosts
Available hosts → from 208.230.197.65 to 208.230.197.126
- d) Mask: 255.255.255.192

Subnet 3:

- a) Network address: 208.230.197.128/26
- b) Broadcast address: 208.230.197.191
- c) Range of available hosts: $2^6 - 2 = 62$ hosts
Available hosts → from 208.230.197.129 to 208.230.197.190
- d) Mask: 255.255.255.192

Subnet 4:

- a) Network address: 208.230.197.192/26
- b) Broadcast address: 208.230.197.255
- c) Range of available hosts: $2^6 - 2 = 62$ hosts
Available hosts → from 208.230.197.193 to 208.230.197.254
- d) Mask: 255.255.255.192

