Zadatak 1

|  |  |  |
| --- | --- | --- |
| /0 | 00000000.00000000.00000000.00000000 | 0.0.0.0 |
| /1 | 10000000. 00000000.00000000.00000000 | 128.0.0.0 |
| /2 | 11000000. 00000000.00000000.00000000 | 192.0.0.0 |
| /3 | 11100000. 00000000.00000000.00000000 | 224.0.0.0 |
| /4 | 11110000. 00000000.00000000.00000000 | 240.0.0.0 |
| /5 | 11111000. 00000000.00000000.00000000 | 248.0.0.0 |
| /6 | 11111100. 00000000.00000000.00000000 | 252.0.0.0 |
| /7 | 11111110. 00000000.00000000.00000000 | 254.0.0.0 |
| /8 | 11111111. 00000000.00000000.00000000 | 255.0.0.0 |
| /9 | 11111111. 10000000.00000000.00000000 | 255.128.0.0 |
| /10 | 11111111. 11000000.00000000.00000000 | 255.192.0.0 |
| /11 | 11111111. 11100000.00000000.00000000 | 255.224.0.0 |
| /12 | 11111111. 11110000.00000000.00000000 | 255.240.0.0 |
| /13 | 11111111. 11111000.00000000.00000000 | 255.248.0.0 |
| /14 | 11111111. 11111100.00000000.00000000 | 255.252.0.0 |
| /15 | 11111111. 11111110.00000000.00000000 | 255.254.0.0 |
| /16 | 11111111. 11111111.00000000.00000000 | 255.255.0.0 |
| /17 | 11111111. 11111111.10000000.00000000 | 255.255.128.0 |
| /18 | 11111111. 11111111.11000000.00000000 | 255.255.192.0 |
| /19 | 11111111. 11111111.11100000.00000000 | 255.255.224.0 |
| /20 | 11111111. 11111111.11110000.00000000 | 255.255.240.0 |
| /21 | 11111111. 11111111.11111000.00000000 | 255.255.248.0 |
| /22 | 11111111. 11111111.11111100.00000000 | 255.255.252.0 |
| /23 | 11111111. 11111111.11111110.00000000 | 255.255.254.0 |
| /24 | 11111111. 11111111.11111111.00000000 | 255.255.255.0 |
| /25 | 11111111. 11111111.11111111.10000000 | 255.255.255.128 |
| /26 | 11111111. 11111111.11111111.11000000 | 255.255.255.192 |
| /27 | 11111111. 11111111.11111111.11100000 | 255.255.255.224 |
| /28 | 11111111. 11111111.11111111.11110000 | 255.255.255.240 |
| /29 | 11111111. 11111111.11111111.11111000 | 255.255.255.248 |
| /30 | 11111111. 11111111.11111111.11111100 | 255.255.255.252 |
| /31 | 11111111. 11111111.11111111.11111110 | 255.255.255.254 |
| /32 | 11111111. 11111111.11111111.11111111 | 255.255.255.255 |

Zadatak 2

Klasa A:

|  |  |  |  |
| --- | --- | --- | --- |
| 10.0.0.0/08 | Broj podmreža 2^(8-8)=2^0 =1 | Svaka se sastoji od 2^(32-08)-2=2^24-2=16777216-2 | =16777214 |
| 10.0.0.0/09 | Broj podmreža 2^(9-8)=2^1 =2 | Svaka se sastoji od 2^(32-09)-2=2^23-2=8388608-2 | =8388606 |
| 10.0.0.0/10 | Broj podmreža 2^(10-8)=2^2 =4 | Svaka se sastoji od 2^(32-10)-2=2^22-2=4194304-2 | =4194302 |
| 10.0.0.0/11 | Broj podmreža 2^(11-8)=2^3 =8 | Svaka se sastoji od 2^(32-11)-2=2^21-2=2097152-2 | =2097152 |
| 10.0.0.0/12 | Broj podmreža 2^(12-8)=2^4 =16 | Svaka se sastoji od 2^(32-12)-2=2^20-2=1048576-2 | =1048574 |
| 10.0.0.0/13 | Broj podmreža 2^(13-8)=2^5 =32 | Svaka se sastoji od 2^(32-13)-2=2^19-2=524288-2 | =524286 |
| 10.0.0.0/14 | Broj podmreža 2^(14-8)=2^6 =64 | Svaka se sastoji od 2^(32-14)-2=2^18-2=262144-2 | =262142 |
| 10.0.0.0/15 | Broj podmreža 2^(15-8)=2^7 =128 | Svaka se sastoji od 2^(32-15)-2=2^17-2=131072-2 | =131070 |
| 10.0.0.0/16 | Broj podmreža 2^(16-8)=2^8 =256 | Svaka se sastoji od 2^(32-16)-2=2^16-2=65536-2 | =65534 |
| 10.0.0.0/17 | Broj podmreža 2^(17-8)=2^9 =512 | Svaka se sastoji od 2^(32-17)-2=2^15-2=32768-2 | =32764 |
| 10.0.0.0/18 | Broj podmreža 2^(18-8)=2^10 =1024 | Svaka se sastoji od 2^(32-18)-2=2^14-2=16384-2 | =16382 |
| 10.0.0.0/19 | Broj podmreža 2^(19-8)=2^11 =2048 | Svaka se sastoji od 2^(32-19)-2=2^13-2=8192-2 | =8190 |
| 10.0.0.0/20 | Broj podmreža 2^(20-8)=2^12 =4096 | Svaka se sastoji od 2^(32-20)-2=2^12-2=4096-2 | =4094 |
| 10.0.0.0/21 | Broj podmreža 2^(21-8)=2^13 =8192 | Svaka se sastoji od 2^(32-21)-2=2^11-2=2048-2 | =2046 |
| 10.0.0.0/22 | Broj podmreža 2^(22-8)=2^14 =16384 | Svaka se sastoji od 2^(32-22)-2=2^10-2=1024-2 | =1022 |
| 10.0.0.0/23 | Broj podmreža 2^(23-8)=2^15 =32768 | Svaka se sastoji od 2^(32-23)-2=2^09-2=512-2 | =510 |
| 10.0.0.0/24 | Broj podmreža 2^(24-8)=2^16 =65536 | Svaka se sastoji od 2^(32-24)-2=2^08-2=256-2 | =254 |
| 10.0.0.0/25 | Broj podmreža 2^(25-8)=2^17 =131072 | Svaka se sastoji od 2^(32-25)-2=2^07-2=128-2 | =126 |
| 10.0.0.0/26 | Broj podmreža 2^(26-8)=2^18 =262164 | Svaka se sastoji od 2^(32-26)-2=2^06-2=64-2 | =62 |
| 10.0.0.0/27 | Broj podmreža 2^(27-8)=2^19 =524288 | Svaka se sastoji od 2^(32-27)-2=2^05-2=32-2 | =30 |
| 10.0.0.0/28 | Broj podmreža 2^(28-8)=2^20 =108576 | Svaka se sastoji od 2^(32-28)-2=2^04-2=16-2 | =14 |
| 10.0.0.0/29 | Broj podmreža 2^(29-8)=2^21 =2097152 | Svaka se sastoji od 2^(32-29)-2=2^03-2=8-2 | =6 |
| 10.0.0.0/30 | Broj podmreža 2^(30-8)=2^22 =4194304 | Svaka se sastoji od 2^(32-30)-2=2^02-2=4-2 | =2 |

Klasa B:

|  |  |  |  |
| --- | --- | --- | --- |
| 172.16.0.0/12 | Broj podmreža 2^(12-12)=2^0 =1 | Svaka se sastoji od 2^(32-12)-2=2^20-2=1048576-2 | =1048574 |
| 172.16.0.0/13 | Broj podmreža 2^(13-12)=2^1 =2 | Svaka se sastoji od 2^(32-13)-2=2^19-2=524288-2 | =524286 |
| 172.16.0.0/14 | Broj podmreža 2^(14-12)=2^2 =4 | Svaka se sastoji od 2^(32-14)-2=2^18-2=262144-2 | =262142 |
| 172.16.0.0/15 | Broj podmreža 2^(15-12)=2^3 =8 | Svaka se sastoji od 2^(32-15)-2=2^17-2=131072-2 | =131070 |
| 172.16.0.0/16 | Broj podmreža 2^(16-12)=2^4 =16 | Svaka se sastoji od 2^(32-16)-2=2^16-2=65536-2 | =65534 |
| 172.16.0.0/17 | Broj podmreža 2^(17-12)=2^5 =32 | Svaka se sastoji od 2^(32-17)-2=2^15-2=32768-2 | =32766 |
| 172.16.0.0/18 | Broj podmreža 2^(18-12)=2^6 =64 | Svaka se sastoji od 2^(32-18)-2=2^14-2=16384-2 | =16382 |
| 172.16.0.0/19 | Broj podmreža 2^(19-12)=2^7 =128 | Svaka se sastoji od 2^(32-19)-2=2^13-2=8192-2 | =8190 |
| 172.16.0.0/20 | Broj podmreža 2^(20-12)=2^8 =256 | Svaka se sastoji od 2^(32-20)-2=2^12-2=4096-2 | =4094 |
| 172.16.0.0/21 | Broj podmreža 2^(21-12)=2^9 =512 | Svaka se sastoji od 2^(32-21)-2=2^11-2=2048-2 | =2046 |
| 172.16.0.0/22 | Broj podmreža 2^(22-12)=2^10 =1024 | Svaka se sastoji od 2^(32-22)-2=2^10-2=1024-2 | =1022 |
| 172.16.0.0/23 | Broj podmreža 2^(23-12)=2^11 =2048 | Svaka se sastoji od 2^(32-23)-2=2^09-2=512-2 | =510 |
| 172.16.0.0/24 | Broj podmreža 2^(24-12)=2^12 =4096 | Svaka se sastoji od 2^(32-24)-2=2^08-2=256-2 | =254 |
| 172.16.0.0/25 | Broj podmr. 2^(25-12)=2^13 =8192 | Svaka se sastoji od 2^(32-25)-2=2^07-2=128-2 | =126 |
| 172.16.0.0/26 | Broj podmr. 2^(26-12)=2^14 =16384 | Svaka se sastoji od 2^(32-26)-2=2^06-2=64-2 | =62 |
| 172.16.0.0/27 | Broj podmr. 2^(27-12)=2^15 =32768 | Svaka se sastoji od 2^(32-27)-2=2^05-2=32-2 | =30 |
| 172.16.0.0/28 | Broj podmr. 2^(28-12)=2^16 =65536 | Svaka se sastoji od 2^(32-28)-2=2^04-2=16-2 | =14 |
| 172.16.0.0/29 | Broj podmr. 2^(29-12)=2^17 =131072 | Svaka se sastoji od 2^(32-29)-2=2^03-2=8-2 | =6 |
| 172.16.0.0/30 | Broj podmr. 2^(30-12)=2^18 =262164 | Svaka se sastoji od 2^(32-30)-2=2^02-2=4-2 | =2 |

Klasa C:

|  |  |  |  |
| --- | --- | --- | --- |
| 192.168.0.0/17 | Broj podmreža 2^(17-16)=2^1 =2 | Svaka se sastoji od 2^(32-17)-2=2^15-2=32768-2 | =32766 |
| 192.168.0.0/18 | Broj podmreža 2^(18-16)=2^2 =4 | Svaka se sastoji od 2^(32-18)-2=2^14-2=16384-2 | =16382 |
| 192.168.0.0/19 | Broj podmreža 2^(19-16)=2^3 =8 | Svaka se sastoji od 2^(32-19)-2=2^13-2=8192-2 | =8190 |
| 192.168.0.0/20 | Broj podmreža 2^(20-16)=2^4 =16 | Svaka se sastoji od 2^(32-20)-2=2^12-2=4096-2 | =4094 |
| 192.168.0.0/21 | Broj podmreža 2^(21-16)=2^5 =32 | Svaka se sastoji od 2^(32-21)-2=2^11-2=2048-2 | =2046 |
| 192.168.0.0/22 | Broj podmreža 2^(22-16)=2^6 =64 | Svaka se sastoji od 2^(32-22)-2=2^10-2=1024-2 | =1022 |
| 192.168.0.0/23 | Broj podmreža 2^(23-16)=2^7 =128 | Svaka se sastoji od 2^(32-23)-2=2^09-2=512-2 | =510 |
| 192.168.0.0/24 | Broj podmreža 2^(24-16)=2^8 =256 | Svaka se sastoji od 2^(32-24)-2=2^08-2=256-2 | =254 |
| 192.168.0.0/25 | Broj podmreža 2^(25-16)=2^9 =512 | Svaka se sastoji od 2^(32-25)-2=2^07-2=128-2 | =126 |
| 192.168.0.0/26 | Broj podmreža 2^(26-16)=2^10 =1024 | Svaka se sastoji od 2^(32-26)-2=2^06-2=64-2 | =62 |
| 192.168.0.0/27 | Broj podmreža 2^(27-16)=2^11 =2048 | Svaka se sastoji od 2^(32-27)-2=2^05-2=32-2 | =30 |
| 192.168.0.0/28 | Broj podmreža 2^(28-16)=2^12 =4096 | Svaka se sastoji od 2^(32-28)-2=2^04-2=16-2 | =14 |
| 192.168.0.0/29 | Broj podmr. 2^(29-16)=2^13 =8192 | Svaka se sastoji od 2^(32-29)-2=2^03-2=8-2 | =6 |
| 192.168.0.0/30 | Broj podmr. 2^(30-16)=2^14 =16384 | Svaka se sastoji od 2^(32-30)-2=2^02-2=4-2 | =2 |

Zadatak 3

10.50.200.1 /14

|  |  |  |
| --- | --- | --- |
| 00001010.00110010.11001000.00000001 |  |  |
| 11111111.11111100.00000000.00000000 | /14 |  |
| 00001010.00110000. 00000000.00000000 | NETWORK | 10.48.0.0 |
| 00001010.00110000. 00000000.00000001 | FIRST | 10.48.0.1 |
| 00001010.00110000.11111111.11111110 | LAST | 10.48.255.254 |
| 00001010.00110000.11111111.11111111 | BROADCAST | 10.48.255.255 |

10.50.200.1 /15

|  |  |  |
| --- | --- | --- |
| 00001010.00110010.11001000.00000001 |  |  |
| 11111111.11111110.00000000.00000000 | /15 |  |
| 00001010.00110010. 00000000.00000000 | NETWORK | 10.50.0.0 |
| 00001010.00110010. 00000000.00000001 | FIRST | 10.50.0.1 |
| 00001010.00110011.11111111.11111110 | LAST | 10.51.255.254 |
| 00001010.00110011.11111111.11111111 | BROADCAST | 10.51.255.255 |

10.50.200.1 /16

|  |  |  |
| --- | --- | --- |
| 00001010.00110010.11001000.00000001 |  |  |
| 11111111.11111110.00000000.00000000 | /16 |  |
| 00001010.00110010. 00000000.00000000 | NETWORK | 10.50.0.0 |
| 00001010.00110010. 00000000.00000001 | FIRST | 10.50.0.1 |
| 00001010.00110010.11111111.11111110 | LAST | 10.50.255.254 |
| 00001010.00110010.11111111.11111111 | BROADCAST | 10.50.255.255 |

10.50.200.1 /17

|  |  |  |
| --- | --- | --- |
| 00001010.00110010.11001000.00000001 |  |  |
| 11111111.11111111.10000000.00000000 | /17 |  |
| 00001010.00110010.10000000.00000000 | NETWORK | 10.50.128.0 |
| 00001010.00110000.10000000.00000001 | FIRST | 10.50.0.1 |
| 00001010.00110000.11111111.11111110 | LAST | 10.50.255.254 |
| 00001010.00110000.11111111.11111111 | BROADCAST | 10.50.255.255 |

10.50.200.1 /18

|  |  |  |
| --- | --- | --- |
| 00001010.00110010.11001000.00000001 |  |  |
| 11111111.11111111.11000000.00000000 | /18 |  |
| 00001010.00110010.11000000.00000000 | NETWORK | 10.50.192.0 |
| 00001010.00110010.11000000.00000001 | FIRST | 10.50.192.1 |
| 00001010.00110010.11111111.11111110 | LAST | 10.50.255.254 |
| 00001010.00110010.11111111.11111111 | BROADCAST | 10.50.255.255 |

10.50.200.1 /19

|  |  |  |
| --- | --- | --- |
| 00001010.00110010.11001000.00000001 |  |  |
| 11111111.11111111.11100000.00000000 | /19 |  |
| 00001010.00110010.11000000.00000000 | NETWORK | 10.50.192.0 |
| 00001010.00110010.11000000.00000001 | FIRST | 10.50.192.1 |
| 00001010.00110010.11011111.11111110 | LAST | 10.50.223.254 |
| 00001010.00110010.11011111.11111111 | BROADCAST | 10.50.223.255 |

10.50.200.1 /20

|  |  |  |
| --- | --- | --- |
| 00001010.00110010.11001000.00000001 |  |  |
| 11111111.11111111.11110000.00000000 | /20 |  |
| 00001010.00110010.11000000.00000000 | NETWORK | 10.50.192.0 |
| 00001010.00110010.11000000.00000001 | FIRST | 10.50.192.1 |
| 00001010.00110010.11001111.11111110 | LAST | 10.50.207.254 |
| 00001010.00110010.11001111.11111111 | BROADCAST | 10.50.207.255 |

10.50.200.1 /21

|  |  |  |
| --- | --- | --- |
| 00001010.00110010.11001000.00000001 |  |  |
| 11111111.11111111.11111000.00000000 | /21 |  |
| 00001010.00110010.11001000.00000000 | NETWORK | 10.50.200.0 |
| 00001010.00110010.11001000.00000001 | FIRST | 10.50.200.1 |
| 00001010.00110010.11001111.11111110 | LAST | 10.50.207.254 |
| 00001010.00110010.11001111.11111111 | BROADCAST | 10.50.207.255 |

10.50.200.1 /22

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 00001010.00110010.11001000.00000001 |  |  | 00001010.00110010.11001000.00000001 |  |  |
| 11111111.11111111.11111100.00000000 | /22 |  | 11111111.11111110.00000000.00000000 | /15 |  |
| 00001010.00110010.11001000.00000000 | NETWORK | 10.50.200.0 | 00001010.00110010. 00000000.00000000 | NETWORK | 10.50.0.0 |
| 00001010.00110010.11001000.00000001 | FIRST | 10.50.200.1 | 00001010.00110010. 00000000.00000001 | FIRST | 10.50.0.1 |
| 00001010.00110010.11001011.11111110 | LAST | 10.50.203.254 | 00001010.00110011.11111111.11111110 | LAST | 10.51.255.254 |
| 00001010.00110010.11001011.11111111 | BROADCAST | 10.50.203.255 | 00001010.00110011.11111111.11111111 | BROADCAST | 10.51.255.255 |

10.50.200.1 /23

|  |  |  |
| --- | --- | --- |
| 00001010.00110010.11001000.00000001 |  |  |
| 11111111.11111111.11111110.00000000 | /23 |  |
| 00001010.00110010.11001000.00000000 | NETWORK | 10.50.200.0 |
| 00001010.00110010.11001000.00000001 | FIRST | 10.50.200.1 |
| 00001010.00110010.11001001.11111110 | LAST | 10.50.201.254 |
| 00001010.00110010.11001001.11111111 | BROADCAST | 10.50.201.255 |

10.50.200.1 /24

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 00001010.00110010.11001000.00000001 |  |  | 00001010.00110010.11001000.00000001 |  |  |
| 11111111.11111111.11111111.00000000 | /24 |  | 11111111.11111110.00000000.00000000 | /15 |  |
| 00001010.00110010.11001000.00000000 | NETWORK | 10.50.200.0 | 00001010.00110010. 00000000.00000000 | NETWORK | 10.50.0.0 |
| 00001010.00110010.11001000.00000001 | FIRST | 10.50.200.1 | 00001010.00110010. 00000000.00000001 | FIRST | 10.50.0.1 |
| 00001010.00110010.11001000.11111110 | LAST | 10.50.200.254 | 00001010.00110011.11111111.11111110 | LAST | 10.51.255.254 |
| 00001010.00110010.11001000.11111111 | BROADCAST | 10.50.200.255 | 00001010.00110011.11111111.11111111 | BROADCAST | 10.51.255.255 |

10.50.200.1 /25

|  |  |  |
| --- | --- | --- |
| 00001010.00110010.11001000.00000001 |  |  |
| 11111111.11111111.11111111.10000000 | /25 |  |
| 00001010.00110010.11001000.00000000 | NETWORK | 10.50.200.0 |
| 00001010.00110010.11001000.00000001 | FIRST | 10.50.200.1 |
| 00001010.00110010.11001000.11111110 | LAST | 10.50.200.254 |
| 00001010.00110010.11001000.11111111 | BROADCAST | 10.50.200.255 |

10.50.200.1 /26

|  |  |  |
| --- | --- | --- |
| 00001010.00110010.11001000.00000001 |  |  |
| 11111111.11111111.11111111.11000000 | /26 |  |
| 00001010.00110010.11001000.00000000 | NETWORK | 10.50.200.0 |
| 00001010.00110010.11001000.00000001 | FIRST | 10.50.200.1 |
| 00001010.00110010.11001000.00111110 | LAST | 10.50.200.62 |
| 00001010.00110010.11001000.00111111 | BROADCAST | 10.50.200.63 |

10.50.200.1 /27

|  |  |  |
| --- | --- | --- |
| 00001010.00110010.11001000.00000001 |  |  |
| 11111111.11111111.11111111.11100000 | /27 |  |
| 00001010.00110010.11001000.00000000 | NETWORK | 10.50.200.0 |
| 00001010.00110010.11001000.00000001 | FIRST | 10.50.200.1 |
| 00001010.00110010.11001000.00011110 | LAST | 10.50.200.30 |
| 00001010.00110010.11001000.00011111 | BROADCAST | 10.50.200.31 |

10.50.200.1 /28

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 00001010.00110010.11001000.00000001 |  |  | 00001010.00110010.11001000.00000001 |  |  |
| 11111111.11111111.11111111.11110000 | /28 |  | 11111111.11111110.00000000.00000000 | /15 |  |
| 00001010.00110010.11001000.00000000 | NETWORK | 10.50.200.0 | 00001010.00110010. 00000000.00000000 | NETWORK | 10.50.0.0 |
| 00001010.00110010.11001000.00000001 | FIRST | 10.50.200.1 | 00001010.00110010. 00000000.00000001 | FIRST | 10.50.0.1 |
| 00001010.00110010.11001000.00001110 | LAST | 10.50.200.14 | 00001010.00110011.11111111.11111110 | LAST | 10.51.255.254 |
| 00001010.00110010.11001000.00001111 | BROADCAST | 10.50.200.14 | 00001010.00110011.11111111.11111111 | BROADCAST | 10.51.255.255 |

10.50.200.1 /29

|  |  |  |
| --- | --- | --- |
| 00001010.00110010.11001000.00000001 |  |  |
| 11111111.11111111.11111111.11111000 | /29 |  |
| 00001010.00110010.11001000.00000000 | NETWORK | 10.50.200.0 |
| 00001010.00110010.11001000.00000001 | FIRST | 10.50.200.1 |
| 00001010.00110010.11001000.00000110 | LAST | 10.50.200.6 |
| 00001010.00110010.11001000.00000111 | BROADCAST | 10.50.200.7 |

10.50.200.1 /30

|  |  |  |
| --- | --- | --- |
| 00001010.00110010.11001000.00000001 |  |  |
| 11111111.11111111.11111111.11111100 | /30 |  |
| 00001010.00110010.11001000.00000000 | NETWORK | 10.50.200.0 |
| 00001010.00110010.11001000.00000001 | FIRST | 10.50.200.1 |
| 00001010.00110010.11001000.00000010 | LAST | 10.50.200.2 |
| 00001010.00110010.11001000.00000011 | BROADCAST | 10.50.200.3 |

172.16.0.55/28

|  |
| --- |
| 10101100.00010000.00000000.00110111 |
| 11111111.11111111.11111111.11110000 /28 |
| 10101100.00010000.00000000.00110000 NETWORK 172.16.0.48 |
| 10101100.00010000.00000000.00110001 FIRST 172.16.0.49 |
| 10101100.00010000.00000000.00111110 LAST 172.16.0.62 |
| 10101100.00010000.00000000.00111111 BROADCAST 172.16.0.63 |

172.17.31.44/28

|  |
| --- |
| 10101100.00010001.00011111.00101100 |
| 11111111.11111111.11111111.11110000 /28 |
| 10101100.00010001.00011111.00100000 NETWORK 172.17.31.32 |
| 10101100.00010001.00011111.00100001 FIRST 172.17.31.33 |
| 10101100.00010001.00011111.00101110 LAST 172.17.31.46 |
| 10101100.00010001.00011111.00101111 BROADCAST 172.17.31.47 |

172.16.10.20/29

|  |
| --- |
| 10101100.00001111.00001010.00010100 |
| 11111111.11111111.11111111.11111000 /29 |
| 10101100.00001111.00001010.00010000 NETWORK 172.16.10.16 |
| 10101100.00001111.00001010.00010001 FIRST 172.16.10.17 |
| 10101100.00001111.00001010.00010110 LAST 172.16.10.22 |
| 10101100.00001111.00001010.00010111 BROADCAST 172.16.10.23 |

172.22.23.22/14

|  |
| --- |
| 10101100.00010110.00010111.00010110 |
| 11111111.11111100.00000000.00000000 /14 |
| 10101100.00010100.00000000.00000000 NETWORK 172.20.0.0 |
| 10101100.00010100.00000000.00000001 FIRST 172.20.0.1 |
| 10101100.00010111.11111111.11111110 LAST 172.23.255.254 |
| 10101100.00010111.11111111.11111111 BROADCAST 172.23.255.255 |

172.27.0.1/15

|  |
| --- |
| 10101100.00011011.00000000.00000001 |
| 11111111.11111110.00000000.00000000 /15 |
| 10101100.00011010.00000000.00000000 NETWORK 172.26.0.0 |
| 10101100.00011010.00000000.00000001 FIRST 172.26.0.1 |
| 10101100.00011011.11111111.11111110 LAST 172.27.255.254 |
| 10101100.00011011.11111111.11111111 BROADCAST 172.27.255.255 |

172.31.0.100/21

|  |
| --- |
| 10101100.00011111.00000000.01100100 |
| 11111111.11111111.11111000.00000000 /21 |
| 10101100.00011111.00000000.0000000 NETWORK 172.31.0.0 |
| 10101100.00011111.00000000.00000001 FIRST 172.31.0.1 |
| 10101100.00011111.00000111.11111110 LAST 172.31.7.254 |
| 10101100.00011111.00000111.11111111 BROADCAST 172.31.7.255 |

172.25.25.25/19

|  |
| --- |
| 10101100.00011001.00011001.00011001 |
| 11111111.11111111.11100000.00000000 /19 |
| 10101100.00011001.00000000.00000000 NETWORK 172.25.0.0 |
| 10101100.00011001.00000000.00000001 FIRST 172.25.0.1 |
| 10101100.00011001.00011111.11111110 LAST 172.25.31.254 |
| 10101100.00011001.00011111.11111111 BROADCAST 172.25.31.255 |

172.16.200.200/25

|  |
| --- |
| 10101100.00010000.11001000.11001000 |
| 11111111.11111111.11111111.10000000 /25 |
| 10101100.00010000.11001000.10000000 NETWORK 172.16.200.128 |
| 10101100.00010000.11001000.10000001 FIRST 172.16.200.129 |
| 10101100.00010000.11001000.11111110 LAST 172.16.200.254 |
| 10101100.00010000.11001000.11111111 BROADCAST 172.16.200.255 |

172.16.200.200/21

|  |
| --- |
| 10101100.00010000.11001000.11001000 |
| 11111111.11111111.11111000.00000000 /21 |
| 10101100.00010000.11001000.00000000 NETWORK 172.16.200.0 |
| 10101100.00010000.11001000.00000001 FIRST 172.16.200.1 |
| 10101100.00010000.11001111.11111110 LAST 172.16.207.254 |
| 10101100.00010000.11001111.11111111 BROADCAST 172.16.207.255 |

192.168.44.99/26

|  |
| --- |
| 11000000.10101000.00101100.01100100 |
| 11111111.11111111.11111111.11000000 /26 |
| 11000000.10101000.00101100.01000000 NETWORK 192.168.44.64 |
| 11000000.10101000.00101100.01000001 FIRST 192.168.44.65 |
| 11000000.10101000.00101100.01111110 LAST 192.168.44.126 |
| 11000000.10101000.00101100.01111111 BROADCAST 192.168.44.127 |

192.168.101.101/23

|  |
| --- |
| 11000000.10101000.01100101.01100101 |
| 11111111.11111111.11111110.00000000 /23 |
| 11000000.10101000.01100100.00000000 NETWORK 192.168.100.0 |
| 11000000.10101000.01100100.00000001 FIRST 192.168.100.1 |
| 11000000.10101000.01100101.11111110 LAST 192.168.101.254 |
| 11000000.10101000.01100101.11111111 BROADCAST 192.168.101.255 |

192.168.24.24/30

|  |
| --- |
| 11000000.10101000.00011000.00011000 |
| 11111111.11111111.11111111.11111100 /30 |
| 11000000.10101000.00011000.00011000 NETWORK 192.168.24.24 |
| 11000000.10101000.00011000.00011001 FIRST 192.168.24.25 |
| 11000000.10101000.00011000.00011110 LAST 192.168.24.26 |
| 11000000.10101000.00011000.00011111 BROADCAST 192.168.24.27 |

192.168.33.56/25

|  |
| --- |
| 11000000.10101000.00100001.00111000 |
| 11111111.11111111.11111111.10000000 /25 |
| 11000000.10101000.00100001.00000000 NETWORK 192.168.33.0 |
| 11000000.10101000.00100001.00000001 FIRST 192.168.33.1 |
| 11000000.10101000.00100001.01111110 LAST 192.168.33.126 |
| 11000000.10101000.00100001.01111111 BROADCAST 192.168.33.127 |

192.168.33.56/28

|  |
| --- |
| 11000000.10101000.00100001.00111000 |
| 11111111.11111111.11111111.11110000 /28 |
| 11000000.10101000.00100001.00110000 NETWORK 192.168.33.48 |
| 11000000.10101000.00100001.00110001 FIRST 192.168.33.49 |
| 11000000.10101000.00100001.00111110 LAST 192.168.33.62 |
| 11000000.10101000.00100001.00111111 BROADCAST 192.168.33.63 |

192.168.33.56/22

|  |
| --- |
| 11000000.10101000.00100001.00111000 |
| 11111111.11111111.11111100.00000000 /22 |
| 11000000.10101000.00100000.00000000 NETWORK 192.168.32.0 |
| 11000000.10101000.00100000.00000001 FIRST 192.168.32.1 |
| 11000000.10101000.00100011.11111110 LAST 192.168.35.254 |
| 11000000.10101000.00100011.11111111 BROADCAST 192.168.35.255 |

192.168.1.11/30

|  |
| --- |
| 11000000.10101000.00000001.00001011 |
| 11111111.11111111.11111111.11111100 /30 |
| 11000000.10101000.00000001.00001000 NETWORK 192.168.1.8 |
| 11000000.10101000.00000001.00001001 FIRST 192.168.1.9 |
| 11000000.10101000.00000001.00001010 LAST 192.168.1.10 |
| 11000000.10101000.00000001.00001011 BROADCAST 192.168.1.11 |

192.168.222.222/27

|  |
| --- |
| 11000000.10101000.11011110.11011110 |
| 11111111.11111111.11111111.11100000 /27 |
| 11000000.10101000.11011110.11000000 NETWORK 192.168.222.192 |
| 11000000.10101000.11011110.11000001 FIRST 192.168.222.193 |
| 11000000.10101000.11011110.11011110 LAST 192.168.222.222 |
| 11000000.10101000.11011110.11011111 BROADCAST 192.168.222.223 |

192.168.222.222/29

|  |
| --- |
| 11000000.10101000.11011110.11011110 |
| 11111111.11111111.11111111.11111000 /29 |
| 11000000.10101000.11011110.11011000 NETWORK 192.168.222.216 |
| 11000000.10101000.11011110.11011001 FIRST 192.168.222.217 |
| 11000000.10101000.11011110.11011110 LAST 192.168.222.222 |
| 11000000.10101000.11011110.11011111 BROADCAST 192.168.222.223 |

Zadatak 4

1.

|  |
| --- |
| 192.168.1.0/26 |
| 11000000.10101000.00000001.00000000 |
| 11111111.11111111.11111111.11000000 |

|  |
| --- |
| 192.168.1.64/26 |
| 11000000.10101000.00000001.01000000 |
| 11111111.11111111.11111111.11000000 |

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| --- |
| 192.168.1.128/27 |
| 11000000.10101000.00000001.10000000 |
| 11111111.11111111.11111111.11100000 |

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| --- |
| 192.168.1.160/27 |
| 11000000.10101000.00000001.10100000 |
| 11111111.11111111.11111111.11100000 |

|  |
| --- |
| 192.168.1.192/26 |
| 11000000.10101000.00000001.11000000 |
| 11111111.11111111.11111111.11000000 |
| -------------------------------------------------------- |
| 11000000.10101000.00000001.|00000000 ->summary subnet /24 |
| 192.168.1.0/24 adresa sažete mreže |

2.

|  |
| --- |
| 192.168.0.0/24 |
| 11000000.10101000.00000000.00000000 |
| 11111111.11111111.11111111.00000000 |

|  |
| --- |
| 192.168.1.0/24 |
| 11000000.10101000.00000001.00000000 |
| 11111111.11111111.11111111.00000000 |

|  |
| --- |
| 192.168.2.0/24 |
| 11000000.10101000.00000010.00000000 |
| 11111111.11111111.11111111.00000000 |

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| --- |
| 192.168.3.0/24 |
| 11000000.10101000.00000011.00000000 |
| 11111111.11111111.11111111.00000000 |
| -------------------------------------------------------- |
| 11000000.10101000.000000|00.00000000 ->summary subnet /22 |
| 192.168.0.0/22 adresa sažete mreže |

3.

|  |
| --- |
| 192.168.2.0/24 |
| 11000000.10101000.00000010.00000000 |
| 11111111.11111111.11111111.00000000 |

|  |
| --- |
| 192.168.3.0/24 |
| 11000000.10101000.00000011.00000000 |
| 11111111.11111111.11111111.00000000 |

|  |
| --- |
| 192.168.4.0/24 |
| 11000000.10101000.00000100.00000000 |
| 11111111.11111111.11111111.00000000 |

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| --- |
| 192.168.5.0/24 |
| 11000000.10101000.00000101.00000000 |
| 11111111.11111111.11111111.00000000 |
| ------------------------------------------------------- |
| 11000000.10101000.00000|000.00000000 ->summary subnet /21 |
| 192.168.0.0/21 adresa sažete mreže |

4.

|  |
| --- |
| 10.10.0.0/23 |
| 00001010.00001010.00000000.00000000 |
| 11111111.11111111.11111110.00000000 |

|  |
| --- |
| 10.10.2.0/23 |
| 00001010.00001010.00000010.00000000 |
| 11111111.11111111.11111110.00000000 |

|  |
| --- |
| 10.10.4.0/23 |
| 00001010.00001010.00000100.00000000 |
| 11111111.11111111.11111110.00000000 |

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| --- |
| 10.10.6.0/23 |
| 00001010.00001010.00000110.00000000 |
| 11111111.11111111.11111110.00000000 |
| -------------------------------------------------------- |
| 00001010.00001010.00000|000.00000000 ->summary subnet /21 |
| 10.10.0.0/21 adresa sažete mreže |

5.

|  |
| --- |
| 172.16.20.128/26 |
| 10101100.00010000.00010100.10000000 |
| 11111111.11111111.11111111.11000000 |

|  |
| --- |
| 172.16.20.192/26 |
| 10101100.00010000.00010100.11000000 |
| 11111111.11111111.11111111.11000000 |

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| --- |
| 172.16.21.0/25 |
| 10101100.00010000.00010101.00000000 |
| 11111111.11111111.11111111.10000000 |

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| --- |
| 172.16.21.128/27 |
| 10101100.00010000.00010101.10000000 |
| 11111111.11111111.11111111.11100000 |
| -------------------------------------------------------- |
| 10101100.00010000.0001010|0.00000000 ->summary subnet /23 |
| 172.16.20.0/23 adresa sažete mreže |

6.

|  |
| --- |
| 172.16.10.0/30 |
| 10101100.00010000.00001010.00000000 |
| 11111111.11111111.11111111.11111100 |

|  |
| --- |
| 172.16.10.4/30 |
| 10101100.00010000.00001010.00000100 |
| 11111111.11111111.11111111.11111100 |

|  |
| --- |
| 172.16.10.8/30 |
| 10101100.00010000.00001010.00001000 |
| 11111111.11111111.11111111.11111100 |

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|  |
| --- |
| 172.16.10.12/30 |
| 10101100.00010000.00001010.00001100 |
| 11111111.11111111.11111111.11111100 |
| -------------------------------------------------------- |
| 10101100.00010000.00001010.0000|0000 ->summary subnet /28 |
| 172.16.10.0/28 adresa sažete mreže |

7.

|  |
| --- |
| 172.16.10.24/30 |
| 10101100.00010000.00001010.00011000 |
| 11111111.11111111.11111111.11111100 |

|  |
| --- |
| 172.16.10.32/30 |
| 10101100.00010000.00001010.00100000 |
| 11111111.11111111.11111111.11111100 |

|  |
| --- |
| 172.16.10.48/30 |
| 10101100.00010000.00001010.00110000 |
| 11111111.11111111.11111111.11111100 |
| ------------------------------------------------------- |
| 10101100.00010000.00001010.00|000000 ->summary subnet /26 |
| 172.16.10.0/26 adresa sažete mreže |

8.

|  |
| --- |
| 192.168.10.0/24 |
| 11000000.10101000.00001010.00000000 |
| 11111111.11111111.11111111.00000000 |

|  |
| --- |
| 192.168.25.0/24 |
| 11000000.10101000.00011001.00000000 |
| 11111111.11111111.11111111.00000000 |

|  |
| --- |
| 192.168.33.0/24 |
| 11000000.10101000.00100001.00000000 |
| 11111111.11111111.11111111.00000000 |

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|  |
| --- |
| 192.168.40.0/24 |
| 11000000.10101000.00101000.00000000 |
| 11111111.11111111.11111111.00000000 |
| --------------------------------------------------------- |
| 11000000.10101000.00|000000.00000000 ->summary subnet /18 |
| 192.168.0.0/18 adresa sažete mreže |

9.

|  |
| --- |
| 10.20.0.0/18 |
| 00001010.00010100.00000000.00000000 |
| 11111111.11111111.11000000.00000000 |

|  |
| --- |
| 10.20.64.0/18 |
| 00001010.00010100.01000000.00000000 |
| 11111111.11111111.11000000.00000000 |
| -------------------------------------------------------- |
| 00001010.00010100.0|0000000.00000000 ->summary subnet /17 |
| 10.20.0.0/17 adresa sažete mreže |

10.

|  |
| --- |
| 192.168.2.0/25 |
| 11000000.10101000.00000010.00000000 |
| 11111111.11111111.11111111.10000000 |

|  |
| --- |
| 192.168.2.192/27 |
| 11000000.10101000.00000010.11000000 |
| 11111111.11111111.11111111.11100000 |

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|  |
| --- |
| 192.168.2.240/29 |
| 11000000.10101000.00000010.11110000 |
| 11111111.11111111.11111111.11111000 |
| -------------------------------------------------------- |
| 11000000.10101000.00000010.|00000000 ->summary subnet /24 |
| 192.168.2.0/24 adresa sažete mreže |

11.

|  |
| --- |
| 192.168.24.0/22 |
| 11000000.10101000.00011000.00000000 |
| 11111111.11111111.11111100.00000000 |

|  |
| --- |
| 192.168.28.0/22 |
| 11000000.10101000.00011100.00000000 |
| 11111111.11111111.11111100.00000000 |
| --------------------------------------------------------- |
| 11000000.10101000.000|00000.00000000 ->summary subnet /19 |
| 192.168.0.0/19 adresa sažete mreže |

12.

|  |
| --- |
| 192.168.64.0/19 |
| 11000000.10101000.01000000.00000000 |
| 11111111.11111111.11100000.00000000 |

|  |
| --- |
| 192.168.128.0/30 |
| 11000000.10101000.10000000.00000000 |
| 11111111.11111111.11111111.11111100 |
| ----------------------------------- |
| 11000000.10101000.|00000000.00000000 ->summary subnet /16 |
| 192.168.0.0/16 adresa sažete mreže |

13.

|  |
| --- |
| 192.168.24.0/24 |
| 11000000.10101000.00011000.00000000 |
| 11111111.11111111.11111111.00000000 |

|  |
| --- |
| 192.168.28.0/26 |
| 11000000.10101000.00011100.00000000 |
| 11111111.11111111.11111111.11000000 |
| -------------------------------------------------------- |
| 11000000.10101000.00011|000.00000000 ->summary subnet /21 |
| 192.168.24.0/21 adresa sažete mreže |

14.

|  |
| --- |
| 192.168.64.0/25 |
| 11000000.10101000.01000000.00000000 |
| 11111111.11111111.11111111.10000000 |

|  |
| --- |
| 192.168.65.0/26 |
| 11000000.10101000.01000001.00000000 |
| 11111111.11111111.11111111.11000000 |
| --------------------------------------------------------- |
| 11000000.10101000.0100000|0.00000000 ->summary subnet /23 |
| 192.168.64.0/23 adresa sažete mreže |

Zadatak 5

a) 2^(32-26)-2=2^6-2=64-2=62 adrese u /26 mreži se mogu koristiti

Adrese koje ne možemo koristiti su 192.168.2.0/26 jer je to network ID, i 192.168.2.255 jer je to broadcast

|  |
| --- |
| 192.168.2.0/26 |
| 11000000.10101000.00000010.00000000 |
| 11111111.11111111.11111111.00000000 |
| ----------------------------------- |
| 11000000.10101000.00000010.00000000 |
| 11000000.10101000.00000010.11111111 |

b)

|  |
| --- |
| 161.53.2.130/29 |
| 10100001.00110101.00000010.10000010 |
| 11111111.11111111.11111111.11111000 /27 |
| 10100001.00110101.00000010.10000000 161.53.2.128 network ID ili adresa mreže |
| 10100001.00110101.00000010.10000001 161.53.2.129 adresa prvog hosta u mreži |
| 10100001.00110101.00000010.10000110 161.53.2.134 adresa zadnjeg hosta u mreži |
| 10100001.00110101.00000010.10000111 161.53.2.135 broadcast |
| 2^(32-29)-2=2^3-2=8-2=6 broj korisnih hostova u mreži |

c)

|  |
| --- |
| 10.50.200.1/15 |
| 00001010.00110010.11001000.00000001 |
| 11111111.11111110.00000000.00000000 /15 |
| 00001010.00110010.00000000.00000000 NETWORK 10.50.0.0 |
| 00001010.00110010.00000000.00000001 FIRST 10.50.0.1 |
| 00001010.00110011.11111111.11111110 LAST 10.51.255.254 |
| 00001010.00110011.11111111.11111111 BROADCAST 10.51.255.255 |
| 2^(32-15)-2=2^17-2=131072-2=131070 broj korisnih hostova u mreži |

d)

|  |
| --- |
| 172.31.0.100/21 |
| 10101100.00011111.00000000.01100100 |
| 11111111.11111111.11111000.00000000 /21 |
| 10101100.00011111.00000000.00000000 NETWORK 172.31.0.0 |
| 10101100.00011111.00000000.00000001 FIRST 172.31.0.1 |
| 10101100.00011111.00000111.11111110 LAST 172.31.7.254 |
| 10101100.00011111.00000111.11111111 BROADCAST 172.31.7.255 |
| 2^(32-21)-2=2^11-2=2048-2=2046 broj korisnih hostova u mreži |

e)

|  |
| --- |
| a)/18 |
| 11111111.11111111.11000000.00000000 255.255.192.0 |

|  |
| --- |
| b)/22 |
| 11111111.11111111.11111100.00000000 255.255.252.0 |

|  |
| --- |
| c)/25 |
| 11111111.11111111.11111111.10000000 255.255.255.128 |

|  |
| --- |
| d)/28 |
| 11111111.11111111.11111111.11110000 255.255.255.240 |

|  |
| --- |
| e)/12 |
| 11111111.11110000.00000000.00000000 255.240.0.0 |

f)

|  |
| --- |
| 192.168.0.0/24 |
| 1. 20 racunala 20+2=>2+2^5=2+2^(32-27)-> 192.168.0.0/27 |
| 2. 10 racunala 10+2=>2+2^4=2+2^(32-28)->192.168.0.0/28 |
| 3. 35 racunala 35+2=>2+2^6=2+2^(32-26)->192.168.0.0/26 |
| 4. 100 racunala 100+2=>2-2^7=2+2^(32-25)->192.168.0.0/25 |

|  |
| --- |
| 192.168.0.0/25 |
| 11000000.10101000.00000000.00000000 NETWORK 192.168.0.0 |
| 11111111.11111111.11111111.10000000 /25 |
| 11000000.10101000.00000000.00000001 FIRST 192.168.0.1 |
| 11000000.10101000.00000000.01111110 LAST 192.168.0.126 |
| 11000000.10101000.00000000.01111111 BROADCAST 192.168.0.127 |

|  |
| --- |
| 192.168.0.128/26 |
| 11000000.10101000.00000000.10000000 NETWORK |
| 11111111.11111111.11111111.11000000 /26 |
| 11000000.10101000.00000000.10000001 FIRST 192.168.0.129 |
| 11000000.10101000.00000000.10111110 LAST 192.168.0.190 |
| 11000000.10101000.00000000.10111111 BROADCAST 192.168.0.191 |

|  |
| --- |
| 192.168.0.192/27 |
| 11000000.10101000.00000000.11000000 NETWORK |
| 11111111.11111111.11111111.11100000 /27 |
| 11000000.10101000.00000000.11000001 FIRST 192.168.0.193 |
| 11000000.10101000.00000000.11011110 LAST 192.168.0.222 |
| 11000000.10101000.00000000.11011111 BROADCAST 192.168.0.223 |

|  |
| --- |
| 192.168.0.224/28 |
| 11000000.10101000.00000000.11100000 NETWORK |
| 11111111.11111111.11111111.11110000 /28 |
| 11000000.10101000.00000000.11100001 FIRST 192.168.0.225 |
| 11000000.10101000.00000000.11101110 LAST 192.168.0.238 |
| 11000000.10101000.00000000.11101111 BROADCAST 192.168.0.239 |

g)

|  |
| --- |
| 11000000.10101000.00001000.00000000 192.168.8.0/24 R3 |
| 11000000.10101000.00001001.00000000 192.168.9.0/24 R3 |
| R2 11000000.10101000.00001000.00000000 192.168.8.0/23 |
| 11000000.10101000.00001010.00000000 192.168.10.0/24 R4 |
| 11000000.10101000.00001011.00000000 192.168.11.0/24 R4 |
| R2 11000000.10101000.00001010.00000000 192.168.10.0/23 |
| 11000000.10101000.00001100.00000000 192.168.12.0/24 R5 |
| 11000000.10101000.00001101.00000000 192.168.13.0/24 R5 |
| 11000000.10101000.00001110.00000000 192.168.14.0/24 R5 |
| 11000000.10101000.00001111.00000000 192.168.15.0/24 R5 |
| R2 11000000.10101000.00001100.00000000 192.168.12.0/22 |
| -------------------------------------------------------------------------------------------------------------------------------- |
| 11000000.10101000.00001000.00000000 192.168.8.0/23 R2 |
| 11000000.10101000.00001010.00000000 192.168.10.0/23 R2 |
| 11000000.10101000.00001100.00000000 192.168.12.0/22 R2 |
| R1 11000000.10101000.00001000.00000000 192.168.8.0/21 |

h)

|  |  |  |
| --- | --- | --- |
| 10101100.00010000.00000000.00000000 | 172.16.0.0/14 | |
| 10101100.00010100.00000000.00000000 | 172.20.0.0/14 | |
| 10101100.00011000.00000000.00000000 | 172.24.0.0/14 | |
| 10101100.00011100.00000000.00000000 | 172.28.0.0/14 | |
| 10101100.00010000.00000000.00000000 | | 172.16.0.0/12 |

i)

|  |
| --- |
| 161.53.2.0/24 na 5 dijelova potrebna subnet maska za podjelu /27 |
| 10100001.00110101.00000010.00000000 |
| 11111111.11111111.11111111.00000000 /24 |

|  |
| --- |
| 1.mreža 161.53.2.0/27 |
| 10100001.00110101.00000010.00000000 |
| 11111111.11111111.11111111.11100000 /27 |
| 10100001.00110101.00000010.00000001 FIRST 161.53.2.1 |
| 10100001.00110101.00000010.00011110 LAST 161.53.2.32 |
| 10100001.00110101.00000010.00011111 BROADCAST 161.53.2.31 |

|  |
| --- |
| 2.mreža 161.53.2.32/27 |
| 10100001.00110101.00000010.00100000 |
| 11111111.11111111.11111111.11100000 /27 |
| 10100001.00110101.00000010.00100001 FIRST 161.53.2.33 |
| 10100001.00110101.00000010.00111110 LAST 161.53.2.62 |
| 10100001.00110101.00000010.00111111 BROADCAST 161.53.2.63 |

|  |
| --- |
| 3.mreža 161.53.2.64/27 |
| 10100001.00110101.00000010.01000000 |
| 11111111.11111111.11111111.11100000 /27 |
| 10100001.00110101.00000010.01000001 FIRST 161.53.2.65 |
| 10100001.00110101.00000010.01011110 LAST 161.53.2.94 |
| 10100001.00110101.00000010.01011111 BROADCAST 161.53.2.95 |

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| --- |
| 4.mreža 161.53.2.96/27 |
| 10100001.00110101.00000010.01100000 |
| 11111111.11111111.11111111.11100000 /27 |
| 10100001.00110101.00000010.01100001 FIRST 161.53.2.97 |
| 10100001.00110101.00000010.01111110 LAST 161.53.2.126 |
| 10100001.00110101.00000010.01111111 BROADCAST 161.53.2.127 |

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| --- |
| 5.mreža 161.53.2.128/27 |
| 10100001.00110101.00000010.10000000 |
| 11111111.11111111.11111111.11100000 /27 |
| 10100001.00110101.00000010.10000001 FIRST 161.53.2.129 |
| 10100001.00110101.00000010.10011110 LAST 161.53.2.158 |
| 10100001.00110101.00000010.10011111 BROADCAST 161.53.2.159 |

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| --- |
| ostatak 161.53.2.160/27,161.53.2.192/27,161.53.2.224/27 |

j)

|  |
| --- |
| 800\*6+350\*6+200\*6+80\*6+36\*6=4800+2100+1200+216=8316 /18 2^(32-18)-2=2^14-2=16384-2=16382 korisnika jer ne stane u /19 mrežu koja ima 8190 hostova |

10.0.0.0/18 NET ID

|  |
| --- |
| 1. 800 korisnika 10.0.0.0/22 |
| 2. 800 korisnika 10.0.4.0/22 |
| 3. 800 korisnika 10.0.8.0/22 |
| 5. 800 korisnika 10.0.16.0/22 |
| 6. 800 korisnika 10.0.20.0/22 |

|  |
| --- |
| 1. 350 korisnika 10.0.24.0/23 |
| 2. 350 korisnika 10.0.26.0/23 |
| 3. 350 korisnika 10.0.28.0/23 |
| 4. 350 korisnika 10.0.30.0/23 |
| 5. 350 korisnika 10.0.32.0/23 |
| 6. 350 korisnika 10.0.34.0/23 |

|  |
| --- |
| 1. 200 korisnika 10.0.36.0/24 |
| 2. 200 korisnika 10.0.37.0/24 |
| 3. 200 korisnika 10.0.38.0/24 |
| 4. 200 korisnika 10.0.39.0/24 |
| 5. 200 korisnika 10.0.40.0/24 |
| 6. 200 korisnika 10.0.41.0/24 |

|  |
| --- |
| 1. 80 korisnika 10.0.42.0/25 |
| 2. 80 korisnika 10.0.42.128/25 |
| 3. 80 korisnika 10.0.43.0/25 |
| 4. 80 korisnika 10.0.43.128/25 |
| 5. 80 korisnika 10.0.44.0/25 |
| 6. 80 korisnika 10.0.44.128/25 |

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| --- |
| 1. 36 korisnika 10.0.45.0/26 |
| 2. 36 korisnika 10.0.45.64/26 |
| 3. 36 korisnika 10.0.45.128/26 |
| 4. 36 korisnika 10.0.45.192/26 |
| 5. 36 korisnika 10.0.46.0/26 |
| 6. 36 korisnika 10.0.46.64/26 |

k)

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| --- |
| 10.0.0.0 A klasa |
| 11111111.11111111.10000000.00000000 255.255.128.0 /17 2^(17-8)=2^9=512 subneta |
| 11111111.11000000.00000000.00000000 255.192.0.0 /10 2^(10-8)=2^2=4 subneta |
| 11111111.11111111.11111100.00000000 255.255.252.0 /22 2^(22-8)=2^14=16384 subneta |
| 11111111.11111111.11111111.11100000 255.255.255.224 /27 2^(27-8)=2^19=524288 subneta |

l)

|  |
| --- |
| 192.168.10.0/27 ispravna adresa mreže |
| 11000000.10101000.00001010.000|00000 |

|  |
| --- |
| 192.168.1.32/26 neispravna |
| 11000000.10101000.00000001.00|100000 |

|  |
| --- |
| 192.168.64.0/18 ispravna adresa mreže |
| 11000000.10101000.01|000000.00000000 |

|  |
| --- |
| 192.168.32.0/18 neispravna |

|  |
| --- |
| 10.192.0.0/10 ispravna |
| 00001010.11|000000.00000000.00000000 |

|  |
| --- |
| 10.240.0.0/11 neispravna |
| 00001010.111|10000.00000000.00000000 |

m)

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| --- |
| 2^(27-16)=2^11=2048 /27 mreža dobijemo ako podijelimo /16 mrežu |

n)

|  |
| --- |
| formula za računanje koliko manjih mreža(m) stane u veću(n) gdje je m>n glasi 2^(m-n) |

o)

|  |
| --- |
| da bi imali 10000 računala u mreži treba nam subnet maska /18 2^(32-18)-2=2^14-2=16384 hostova |

p)

|  |
| --- |
| formula za računanje hostova u mreži je 2^(32-n)-2 pri čemu je n broj hostova. Za hostove nemožemo koristiti network ID i broadcast |