Tarea 1   **Prof.:** MAJID BAYANI ABBASY, ESc inf

* No serán aceptadas las respuestas **Sin** el procedimiento correspondiente

1.

Dirección	Eq. Binario
192.168.1.0/24	Ejemplo: 11000000.10101000.00000001.00000000
153.39.254.185/28	10011001.00100011.11111110.10111001
157.74.77.116/25	10011101.01001010.01001101.01110100
130.105.190.15/27	10000010.01101001.10111110.00001111
164.181.172.237/21	10100100.10110101.10101100.11101101
129.109.217.203/27	10000001.01101101.11011001.11001011
169.244.217.76/27	10101001.11110100.11011001.01001100
240.181.76.31/23	11110000.10110101.01001100.00011111
188.219.246.28/22	10111100.11011011.11110110.00011100
160.35.201.195/23	10100000.00100011.11001001.11000011
184.92.159.161/26	10111000.01011100.10011111.10100001
177.225.68.207/28	10110001.11111111.01000100.11001111
167.227.130.100/29	10100111.11100011.10000010.01100100
155.93.160.105/28	10011011.01011101.10100000.01101001
160.251.124.93/22	10100000.11111011.01111100.01011101
144.92.197.174/26	10010000.01011100.11000101.10101110
162.76.103.37/29	10100010.01001100.01100111.00100101
168.171.242.145/20	10101000.10101011.11110010.10010001
250.71.180.221/27	11111010.01000111.10110100.11011101
142.91.85.95/22	10001110.01011011.01010101.01011111
186.158.192.10/29	10111010.10011110.11000000.00001010
173.155.225.81/20	10101101.10011011.11100001.01010001
157.227.220.38/30	10011101.11100011.11011100.00100110
172.122.209.127/27	10101100.01111010.11010001.01111111
248.205.176.38/27	11111000.11001101.10110000.00100110
134.3.60.116/23	10000110.00000011.00111100.01110100
159.56.252.41/28	10011111.00111000.11111100.00101001
156.28.168.128/24	10011100.00011100.10101000.10000000
101.145.3.123/13	01100101.10010001.00000011.01111011
211.16.44.203/12	11010011.00010000.00101100.11001011
221.18.99.23/18	11011101.00010010.01100011.00010111
191.40.86.1/17	10111111.00101000.01010110.00000001
172.16.83.29/14	10101100.00010000.01010011.00011101
20.25.24.87/15	00010100.00011001.00011000.01010111
21.41.11.54/16	00010101.00101001.00001011.00110110
52.62.27.78/11	00110100.00111110.00011011.01001110
85.45.26.74/8	01010101.00101101.00011010.01001010
2.62.27.78/11	00000010.00111110.00011011.01001110
185.145.226.70/18	10111001.10010001.11100010.01000110
152.60.27.178/21	10011000.00111100.00011011.10110010
185.35.206.12/8	10111001.00100011.11001110.00001100

153.39.254.185/28   255=11111111

128+16+8+1 =153   32+4+2+1 =39   256-1 =0   128+32+16+8+1 =185

10011001.00100111.11111110.10111001

157.74.77.116/25

128+16+8+4+1   64+8+2   64+8+4+1   64+32+16+4

10011101. 01001010. 01001101. 01110100

130.105.190.15/27

128+2   64+32+8+1

10000010.01101001.10111110.00001111

164.181.172.237/21

128+32+4   128+32+16+4+1   128+32+8+4   128+64+32+8+4+1

10100100.10110101.10101100.11101101

129.109.217.203/27

128+1   64+32+8+4+1   128+64+16+8+1   128+64+8+1

10000001.01101101.11011001.11001011

169.244.217.76/27

128+32+8+1   128+64+32+16+4   128+64+16+8+1   64+8+4

10101001.11110100.11011001.01001100

240.181.76.31/23

11110000.10110101.01001100.00011111

128+64+32+16   128+32+16+4+1   64+8+4   32-1

188.219.246.28/22

10111100.11011011.11110110.00011100

128+32+16+8+4   128+64+16+8+2+1   128+64+32+16   16+8+4
+8+4

160.35.201.195/23

128+32   32+2+1   128+64+8+1   128+64+2+1

10100000.00100011.11001001.11000011

184.92.159.161/26

128+32+16+8   64+16+8+4   160-1   160+1

10111000.01011100.10011111.10100001

177.225.68.207/28

128+32+16+1   128+64+32+16+8+...   64+4   192+15

10110001.11111111.01000100.11001111

167.227.130.100/29

160+7   224+3   128+2   64+32+4

10100111.11100011.10000010.01100100

155.93.160.105/28

128+16+8+2+1   64+16+8+4+1   128+32   64+32+8+1

10011011.01011101.10100000.01101001

160.251.124.93/22

128+32   240+8+2+1   96+16+8+4   64+16+8+4+1

10100000.11111011.01111100.01011101

144.92.197.174/26

128+16   95-3   192+5   160+8+4+2

10010000.01011100.11000101.10101110

162.76.103.37/29

160+2   64+8+4   96+7   32+4+1

10100010.01001100.01100111.00100101

168.171.242.145/20

160+8   160+8+2+1   240+2   128+16+1

10101000.10101011.11110010.10010001

250.71.180.221/27

248+2   64+7   160+16+4   223-2

11111010.01000111.10110100.11011101

142.91.85.95/22

128+8+4+2   95-4   80+4+1   96-1

10001110.01011011.01010101.01011111

186.158.192.10/29

160+16+8+1   159-1   128+64   8+2

10111010.10011110.11000000.00001010

173.155.225.81/20

160+12+1   159-4   224+1   80+1

10101101.10011011.11100001.01010001

157.227.220.38/30

159-2   224+2+1   223-3   32+6

10011101.11100011.11011100.00100110

172.122.209.127/27

160+8+4   127-5   192+16+1   128-1

10101100.01111010.11010001.01111111

248.205.176.38/27

240+8   192+8+4+1   160+16   32+4+2

11111000.11001101.10110000.00100110

134.3.60.116/23

128+4+2   2+1   63-3   96+16+4

10000110.00000011.00111100.01110100

159.56.252.41/28

160-1   32+16+8   256-3   32+8+1

10011111.00111000.11111100.00101001

156.28.168.128/24

159-3   16+8+4   160+8   127+1

10011100.00011100.10101000.10000000

101.145.3.123/13

96+5   144+1   2+1   127-4

01100101.10010001.00000011.01111011

211.16.44.203/12

192+16+3   15+1   32+8+4   207-4

11010011.00010000.00101100.11001011

221.18.99.23/18

223-2   16+2   96+3   16+7

11011101.00010010.01100011.00010111

191.40.86.1/17

192-1   32+8   80+6   0+1

10111111.00101000+01010110.00000001

172.16.83.29/14

160+8+4   15+1   80+3   16+8+4+1

10101100.00010000.01010011.00011101

20.25.24.87/15

16+4   16+8+1   16+8   80+7

00010100.00011001.00011000.01010111

21.41.11.54/16

16+4+1   32+8+1   8+3   32+16+6

00010101.00101001.00001011.00110110

52.62.27.78/11

32+16+4   63-1   16+8+2+1   64+14

00110100.00111110.00011011.01001110

85.45.26.74/8

80+4+1   32+8+4+1   16+10   64+10

01010101.00101101.00011010.01001010

2.62.27.78/11

1+1   63-1   16+8+2+1   64+14

00000010.00111110.00011011.01001110

185.145.226.70/18

160+16+9   128+16+1   224+2   64+4+2

10111001.10010001.11100010.01000110

152.60.27.178/21

159-7   32+16+8+4   16+8+2+1   160+16+2

10011000.00111100.00011011.10110010

185.35.206.12/8

176+9   32+3   192+8+4+2   8+4

10111001.00100011.11001110.00001100

	Esa Parte es opcional
85.45.26.74/28	
52.62.27.78/31	
5. 36.26. 26/18	
1.169.207.178/29	
215.85.21.43/17	
72.62.27.78/8	
185.36.26.74/9	
52.62.27.78/10	
85.75.26.94/11	
51.62.29.23/13	
65.45.26.74/15	
32.62.27.78/16	
85.44.33.74/18	
52.22.27.78/20	
85.45.26.74/21	
52.162.127.178/22	
85.45.26.78/23	
52.62.27.28/24	
85.45.26.34/25	
52.62.129.48/26	
80.48.22.74/27	
85.44.33.78/17	
52.22.207.18/22	
85.45.0.0/11	
52.160.127.178/23	
85.145.209.48/24	
52.162.127.128/28	
85.145.126.134/30	
52.162.129.208/21	
80.48.21.14/25	
105.35.206.12/18	
211.163.122.81/20	
85.45.256.73/21	
52.362.127.178/11	
50.136.216. 26/19	
10.169.27.178/19	
215.85.211.143/29	
70.162.127.78/8	
18.136.26.74/9	
152.162.127.78/10	
15.175.26.94/11	
51.122.29.23/23	
65.145.26.74/15	
32.162.127.178/26	
85.44.33.74/17	
52.22.27.78/22	
85.45.26.74/28	
152.162.127.178/12	
15.145.256.178/13	
22.152.27.28/14	

IP/CIDR	Binario
52.12.129.48/16	00110100. 00001100. 10000001. 00110000
180.148.20.14/27	10110100. 10010100. 00010100. 00001110
85.64.33.68/27	01010101. 01000000. 00100001. 01000100
52.22.27.18/12	00110100. 00010110. 00011011. 00010010
85.45.10.0/21	01010101. 00101101. 00001010. 00000000
5.16.12.178/13	00000101. 00010000. 00001100. 10110010
85.15.9.48/14	01010101. 00001111. 00001001. 00110000
52.2.27.128/18	00110100. 00000010. 00011011. 10000000
85.5.16.14/30	01010101. 00000101. 00010000. 00001110
77.12.19.208/25	01010001. 00001100. 00010011. 11010000
88.48.121.14/21	01011000. 00110000. 01111001. 00001110

2. Obligatorio

Binario	Decimal
11000001.10101001.00000001.00000001	193.169.1.1 ejemplo
11001011.10111001.00010001.00100001	203.185.17.33
11000001.10101101.01010001.00000001	193.173.81.1
11100101.10101001.00000001.00000001	229.169.1.1
11110001.11101011.10001001.10000001	241.235.137.129
11011101.10101001.00001001.10010001	211.169.9.145
11001001.11111001.00110001.00001111	201.249.49.15
11010001.10101111.01010011.00101001	209.175.83.41
01010001.10111001.10010001.10000111	81.185.145.135
11001101.10111101.00010101.00001101	205.189.21.13
11011101.11100101.10011001.10100110	221.229.153.166
11011001.10101001.00000001.10000001	217.169.1.129
11110001.10101001.10100101.01000000	241.169.165.64
11111001.10111101.11010001.00100000	249.189.209.32
11111001.10101101.11001111.00010001	249.173.207.17
11001010.11101100.01111000.00000000	202.236.120.0

3. Obligatorio

Dirección	Dir. de Red	Rango de host Utilizable	Dir de Bcast	Dir de la Mascara	
192.168.1.0/24 $^{32-24=8}$	192.168.1.0	.1.1 →254→ .1.254	.1.255	255.255.255.0	8 ceros
153.39.254.185/28 $^{32-28=4}$	.254.185	.254.186 →14→ .254.199	.254.200	255.255.255.240	4 ceros
157.74.77.116/25 $^{32-25=7}$	.77.116	.77.117 →126→ .77.242	.77.243	255.255.255.128	7 ceros
130.105.190.15/27 $^{32-27=5}$	.190.15	.190.16 →30→ .190.45	.190.46	255.255.255.224	5 ceros
164.181.172.237/21 $^{32-21=11}$	.172.237	.172.238 →2046→ .180.235	.180.236	255.255.248.0	11 ceros
129.109.217.203/27 ^{5}	.217.203	.217.204 →30→ .217.233	.217.234	255.255.255.224	5 ceros
169.244.217.76/27 ^{5}	.217.76	.217.77 →50→ .217.106	.217.107	255.255.255.224	5ceros
240.181.76.31/23 $^{32-23=9}$	.76.31	.76.32 →510→ .78.29	.78.30	255.255.254.0	9 ceros
188.219.246.28/22 $^{32-22=10}$	.246.28	.246.29 →1022→ .250.26	.250.27	255.255.252.0	10 ceros
160.35.201.195/23 ^{9}	.201.195	.201.196 →510→ .203.193	.203.194	255.255.254.0	9 ceros
184.92.159.161/26 $^{32-26=6}$	.159.161	.159.162 →62→ .159.223	.159.224	255.255.255.192	6 ceros
177.225.68.207/28 ^{4}	.68.207	.68.208 →14→ .68.221	.68.222	255.255.255.240	4 ceros
167.227.130.100/29 $^{32-29=3}$	.130.100	.130.101 →6→ .130.106	.130.107	255.255.255.248	3 ceros

52.12.129.48/16

32+16+4   8+4   128+1   32+16
00110100.00001100.10000001.00110000

180.148.20.14/27

160+20   128+20   16+4   8+4+2
10110100.10010100.00010100.00001110

85.64.33.68/27

64+20+1   63+1   32+1   64+4
01010101.01000000.00100001.01000100

52.22.27.18/12

32+20   20+2   16+8+2+1   16+2
00110100.00010110.00011011.00010010

85.45.10.0/21

64+20+1   32+8+4+1   8+2
01010101.00101101.00001010.00000000

5.16.12.178/13

4+1   15+1   8+4   160+16+2
00000101.00010000.00001100.10110010

85.15.9.48/14

64+20+1   16-1   8+1   32+16
01010101.00001111.00001001.00110000

52.2.27.128/18

32+20   1+1   24+3   127+1
00110100.00000010.00011011.10000000

85.5.16.14/30

64+20+1   4+1   15+1   12+2
01010101.00000101.00010000.00001110

77.12.19.208/25

64+16+1   8+4   16+3   192+16
01001101.00001100.00010011.11010000

88.48.121.14/21

64+24   32+16   127-6   12+2
01011000.00110000.01111001.00001110

11001011.10111001.00010001.00100001
192+11 176+9 16+1 32+1
203 . 185 . 17 . 33

11000001.10101101.01010001.00000001
192+1 160+13 80+1 1
193 . 173 . 81·1

11100101.10101001.00000001.00000001
224+5 160+9 1 1
229 . 169 . 1 . 1

11010001.10101011.01010011.00101001
208+1 160+15 80+3 32+9

11110001.11101011.10001001.10000001
240+1 224+11 128+9 128+1
241 . 235 . 137 . 129

11011101.10101001.00001001.10010001
208+13 160+9 9 90+54+1
211 . 169 . 9 . 145

11001001.11111001.00110001.00001111
192+9 240+9 48+1 15
201 . 249 . 49 . 15

=> 209 . 175 . 83 . 41

01010001.10111001.10010001.10000111
80+1 176+9 144+1 128+7
81 . 185 . 145 . 135

11011101.11100101.10011001.10100110
208+13 224+5 144+9 160+6
221 . 229 . 163 . 166

11110001.10101001.10100101.01000000
240+1 160+9 160+5 64
241 . 169 . 165 . 64

11111001.10101101.11001111.00010001
240+9 160+13 192+15 16+1
249 . 173 . 207 . 17

11001101.10111101.00010101.00001101
192+13 176+13 16+5 00001101
205 . 184 . 21 . 13

11011001.10101001.00000001.10000001
208+9 160+9 1 128+1
217 . 169 . 1 . 129

11111001.10111001.11010001.00100000
240+9 176+13 208+1 32
249 . 189 . 209 . 32

11001010.11101100.01111000.00000000
192+10 224+12 112+8 0
202 . 236 . 120 . 0

Parte 3

5) **164.181.172.237/21**   32-21= 11
dir red 172.237

usables = $2^{11}-2$
= 2^{11} = 1024·2 = 2048 -2 = 2046

255
- 238
  17

2048
- 18
2028

255
- 237
  13

.173.0

256) 2048
   -1792
     256
        7

22	34	44
256	256	256
x 4	x 7	x 8
1024	1792	2048

.180 o 236-1 por impar
porque el
primero cuenta

8) **240.181.76.31/23**   32-23=9
.76.31→red
.76.32

$2^8 = 256$ ·2 = 512 = 2^9

255
- 31
 224

512
-224
 288

288
-256
 32

.76.255
.77.0
.78.29
.78.30→Bcast

9) **188.219.246.28/22** 32-2

como 2^{10} = 2 veces 2^9
$2^8 = .x+1.y-2$ (if y != 0)
$2^9 = .x+2.y-2$
$2^{10} = .x+4.y-2$
.246+4.28-2 = .250.26

$2^{11} = .x+8.y-2 = 2048$
$2^{12} = .x+16.y-2 = 4096$
$2^{13} = .x+32.y-2 = 8192$
$2^{14} = .x+64.y-2 = 16384$
$2^{15} = .x+128.y-2 = 32768$
$2^{16} = .x+1.y-1.z-2$ (if z != 0) = 65536
$2^{17} = .x+2.y-1.z-2 = 131072$
$2^{18} = .x+4.y-1.z-2 = 262144$
$2^{19} = .x+8.y-1.z-2 = 524288$

$2^{20} = .x+16.y-1.z-2 = 16 48576$
$2^{21} = .x+32.y-1.z-2 = 2017152$
$2^{22} = .x+64.y-1.z-2 = 4194304$
$2^{23} = .x+128.y-1.z-2 = 8388608$
$2^{24} = w+1.x-1.y-1.z-2 = 16 777216$

10) **160.35.201.195/23**
.201.195→red 2^9
:   utilizable
.203.193

IP/CIDR		Network	Range	Broadcast	Mask	Ceros
155.93.160.105/28	4	.160.105	.160.106 →14→ .160.119	.160.120	255.255.255.240	4 ceros
15) 160.251.124.93/22	10	.124.93	.124.94 →1022→ .128.91	.128.92	255.255.252.0	10 ceros
144.92.197.174/26	6	.197.174	.197.175 →62→ .197.236	.197.237	255.255.255.192	6 ceros
162.76.103.37/29	3	.103.37	.103.38 →6→ .103.43	.103.44	255.255.255.248	3 ceros
17) 168.171.242.145/20	12	.171.242.145	.171.242.146 →4094→ .172.2.143	.172.2.144	255.255.240.0	12 ceros
250.71.180.221/27	5	.180.221	.180.222 →30→ .180.251	.180.252	255.255.255.224	5 ceros
19) 142.91.85.95/22	10	.85.95	.85.96 →1022→ .89.93	.89.94	255.255.252.0	10 ceros
186.158.192.10/29	3	.192.10	.192.11 →6→ .192.16	.192.17	255.255.255.248	3 ceros
21) 173.155.225.81/20	12	.225.81	.225.82 →4094→ .241.79	.241.80	255.255.240.0	12 ceros
157.227.220.38/30	2	.220.38	.220.39 →2→ .220.40	.220.41	255.255.255.252	2 ceros
172.122.209.127/27	5	.209.127	.209.128 →30→ .209.157	.209.158	255.255.255.224	5 ceros
248.205.176.38/27	5	.176.38	.176.39 →30→ .176.68	.176.69	255.255.255.224	5 ceros
25) 134.3.60.116/23	9	.60.116	.60.117 →510→ .62.114	.62.115	255.255.254.0	9 ceros
159.56.252.41/28	4	.252.41	.252.42 →14→ .252.55	.252.56	255.255.255.240	4 ceros
27) 156.28.168.128/24	8	.168.128	.168.129 →254→ .169.126	.169.127	255.255.255.0	8 ceros
28) 101.145.3.123/13	19	.145.3.123	.145.3.124 →524286→ .153.2.121	.153.2.122	255.248.0.0	19 ceros
29) 211.16.44.203/12	20	.16.44.203	.16.44.204 →1048574→ .32.43.201	.32.43.202	255.240.0.0	20 ceros
30) 221.18.99.23/18	14	.99.23	.99.24 →16382→ .153.21	.153.22	255.255.192.0	14 ceros
31) 191.40.86.1/17	15	.86.1	.86.2 →32766→ .113.255	.114.0	255.255.128.0	15 ceros
32) 172.16.83.29/14	18	16.83.29	16.83.30 →262142→ 20.82.27	20.82.28	255.252.0.0	18 ceros
33) 20.25.24.87/15	17	25.24.87	25.24.88 →131070→ 27.23.85	27.23.86	255.254.0.0	17 ceros
34) 21.41.11.54/16	16	41.11.54	41.11.55 →65534→ 42.10.52	42.10.53	255.255.0.0	16 ceros
35) 52.62.27.78/11	21	.62.27.78	62.27.79 →2097150→ 94.26.76	94.26.77	255.224.0.0	21 ceros
36) 85.45.26.74/8	24	85.45.26.74	85.45.26.75 →16777214→ 86.44.25.72	86.44.25.73	255.0.0.0	24 ceros
37) 2.62.27.78/11	21	.62.27.78	62.27.79 →2097150→ 94.26.76	94.26.77	255.224.0.0	21 ceros
38) 185.145.226.70/18	14	.145.226.70	.145.226.71 →16382→ .146.34.68	.146.34.69	255.255.192.0	14 ceros
39) 152.60.27.178/21	11	.27.178	.27.179 →2046→ .35.176	.35.177	255.255.248.0	11 ceros
40) 185.35.206.12/8	24	185.35.206.12	185.35.206.13 →16777214→ 186.34.205.10	186.34.205.11	255.0.0.0	24 ceros
41) 211.162.127.8/25	7	.127.8	.127.8 →126→ .127.134	.127.135	255.255.255.128	7 ceros

Esa Parte OPCIONAL (Hacia abajo)

IP/CIDR				
72.62.27.78/8				
185.36.26.74/9				
52.62.27.78/10				
85.75.26.94/11				
51.62.29.23/13				
65.45.26.74/15				
32.62.27.78/16				
85.44.33.74/18				
52.22.27.78/20				
85.45.26.74/21				
52.162.127.178/22				
85.45.26.78/23				
52.62.27.28/24				
85.45.26.34/25				
52.62.129.48/26				
80.48.22.74/27				
85.44.33.78/17				

		Esa Parte OPCIONAL		
85.45.0.0/11				
52.160.127.178/23				
85.145.209.48/24				
52.162.127.128/28				
85.145.126.134/30				
52.162.129.208/21				
80.48.21.14/25				
105.35.206.12/18				
211.163.122.81/20				
85.45.256.73/21				
52.362.127.178/11				
50.136.216. 26/19				
10.169.27.178/19				
215.85.211.143/29				
70.162.127.78/8				
18.136.26.74/9				
152.162.127.78/10				
15.175.26.94/11				
51.122.29.23/23				
65.145.26.74/15				
32.162.127.178/26				
85.44.33.74/17				
52.22.27.78/22				
85.45.26.74/28				
152.162.127.178/12				
15.145.256.178/13				
22.152.27.28/14				
85.25.126.34/15				
52.12.129.48/16				
180.148.20.14/27				
85.64.33.68/27				
52.22.27.18/12				
85.45.10.0/21				
5.16.12.178/13				
85.15.9.48/14				
52.2.27.128/18				
85.5.16.14/30				
77.12.19.208/25				
88.48.121.14/21				