Question 0

$$\frac{n!}{0!(n)!} \; 0.1^{0} \; (1-0.1)^{n-0}$$

$$0.9^{n}$$

n = number of attempts, 1-p = prop of success

n = 5	$0.9^{5} = 0.59$	$1 - 0.59 = 0.41$
n = 8	$0.9^{8} = 0.43$	$1 - 0.43 = 0.56$
n = 15	$0.9^{15} = 0.20$	$1 - 0.2 = 0.8$

n = 15, need to fire 15 shots to succeed.

Question 1

10.1.5.65

10 :	1010	10.1.5.64 | 129
1 :	0001	1010
5 :	0101	0001
65 :	0100 0001	0101
		0100 0000

It would be sent to 10.1.3.3 as it matches the IP's binary conversion the most.

Question 2

131.23.151.76

131: 0100 0011
23: 0001 0111
151: 1001 0111
76: 0100 1100

131.22.0.0 /15.

131: 1000 0011
22: 0001 0110
0: 0000 0000
0: 0000 0000

It will go to 1

Question 3

Prefix	Bin
192.24.0.0/18	1100 0000.0001 0000.0000 0000
192.24.12.0/22	1100 0000.0001 1000.0000 1100

1) 192.24.6.0
192: 1100 0000
24: 0001 1000
6: 0000 0110
0: 0000 0000

B

2) 192.24.14.32
192: 1100 0000
24: 0001 1000
14: 0000 1110
32: 0001 0000

B

3) 192.24.54.0
192: 1100 0000
24: 0001 1000
54: 0011 0110

D