Lab 3

Question 0:

- P = 10%/100% = 0.1%
- N = ?
- K = 0, assume all shots missed.
- (k/n) p^k (1-p)^n-k
- (k/n) = N! / k! (n-k)!
- N! / k! (n-k)! p^k (1-p)^n-k = (1 – 0.1)^n
- 0.9^n
- N = number of shots, p = probability of failure = > 1-p = probability of success
- N = 5, p=0.59 => 1-p = 0.41
- N=9, p=0.39 = > 1-p = 0.61
- N=12, p=0.28 => 1-p =0.72
- N=15, p=0.2 = >1-p = 0.8
- When you shot at least 16 times you have a >= 80% chance of killing the enemy.

Question 1:

- 10.1.5.65/00 == 0000 1010.0000 0001.0000 0101.0100 0001
- 10.1.5.64/29 == 0000 1010.0000 0001.0000 0101.0100 0000

The router will send the packet to **10.1.3.3** or interface **S0.** It will use this because gateway to send the packet because it is the closest looking to the source IP.

Question 2:

- 131.23.151.76/00 == 1000 0011.0001 0111.1001 0111.0100 1100
- 131.22.000.0/15 == 1000 0011.0001 0110.0000 0000.0000 0000
- 131.19.000.0/16 == 1000 0011.0001 0011.0000 0000.0000 0000
- 131.28.000.0/14 == 1000 0011.0000 1100.0000 0000.0000 0000
- 131.16.000.0/12 == 1000 0011.0001 0000.0000 0000.0000 0000

The packet will be forwarded to interface **1**. It will be directed here because this is the closest match to the source IP.

Question 3:

- D = 192.24.0.00/18 == 1100 0000.0001 1000.0000 0000.0000 0000
- B = 192.24.12.0/22 == 1100 0000.0001 1000.0000 1100.0000 0000

1. 192.24.6.0 == 1100 0000.0001 1000.0000 0110.0000 0000
    a. B
2. 192.24.14.32 == 1100 0000.0001 1000.0000 1110.0010 0000
    a. B
3. 192.24.54.0 == 1100 0000.0001 1000.0011 0110.0000 0000
    a. D