1. Suppose you play the game of shooting. You shoot 6 times, each time to a different enemy, and each shot has a 10% chance of success.

1)What's the probability of killing two enemies out of six?

0.1^2 x 0.9^4 = 0.006561

6! / 2! (6-2)! = 720 / 24 \* 2 = 15

15 \* 0.006561 = 9.84%

2) What's the probability of killing at most three enemies out of six?

0.1^3 x 0.9^3 = 0.000729

6! / 3! (6-3)! = 720 / 6 \* 6 = 20

15 \* 0.006561 = 1.45%

3) What's the maximum number of enemies we can kill with 90% probability?

Probably 0

2. Suppose there is only one enemy and two success shots can kill the enemy. Each shot has a 10% chance of success. How many times do you need to shoot to kill the enemy with 80% probability?