Question 1:

My runtime is θ(N) because we are calling the recursion an N number of times. The length of the list goes down by one each time, but the maximum length the recursion is using is N.

Question 2:

My runtime is θ() because we are taking N and dividing it by 2 until it becomes 1 or smaller. After each recursive call N is divided by two hence the runtime is θ()

Question 3:

My runtime is θ(N) because we are calling the recursion an N number of times. The length of the list goes down by one each time, but the maximum length the recursion is using is N.

Question 4:

My runtime is θ(N) because we are calling the recursion an N numbers of times while the two for loops are being called a number that is inferior to an N numbers of times. Since the maximum runtime for each of these is N, the runtime is also N.

Question 5:

My runtime is θ(N) because we are calling the recursion an N number of times. The length of the list goes down by two each time, but the maximum length the recursion is using is N.

Question 6:

My runtime is θ(N) because we are calling the recursion an number of N times due to i increasing up until it reaches the length of the list. The number i goes up by 1 each call.