Question 1:

What is the time, space complexity of following code:

```
int a = 0, b = 0;
for (i = 0; i < N; i++) {
a = a + 1;
}
for (j = 0; j < M; j++) {
b = b + j;
}
```

Ans:
To the best of my knowledge it's O(M+N) because there in loop 1 it takes O(N) and in loop 2 it takes O(M) so we can combine both and say that the final time complex city Is O(M+N)

Question 2:

What does it mean when we say that an algorithm X is asymptotically more efficient than Y?
a)X will be a better choice for all inputs
b)X will be a better choice for all inputs except possibly small inputs
c)X will be a better choice for all inputs except possibly large inputs
d)Y will be a better choice for small inputs

Ans:
To the best of my knowledge it's option 'a' because if the time complexity of all inputs is same in X algorithm then it's the best algorithm compacted to Y algorithm.