

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;
}
```

Answer 1

$O(N+M)$ time complexity (as we don't know which is bigger N or M)
 $O(1)$ space complexity

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

Answer 2

- b) X will be a better choice for all inputs except possibly small inputs