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;
}
```

The first for loop will run N times and have a time complexity of O(n).
The second for loop will run M times and have a time complexity of O(n).
The overall time complexity of the code is O(n+n) which is the same as
O(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

Answer: Option B