1. [15 Points] CLRS, Exercise 24.3-6 (Page 600). The modification is in the implementation of the algorithm (data structures used, etc.) and not in the logic of the algorithm itself. Note that if $W$ is a constant then the running time is actually $O(V + E)$ which is fantastic! Make sure to prove anything that you claim!

2. [10 Points] CLRS, Exercise 25.3-3 (page 640). Give a mathematical proof of your answer!

3. [15 Points] CLRS, Exercise 25.3-6 (page 640). The first part of this problem requires a single counter-example. The second part requires a careful proof.