1. **Part 2, Code**

(a) i. I used the winner from 3 as my basis.

ii. 0.39 s gcc 4.9.2, AMD quad-core 3.0 GHz, my own system.

iii. A. Vectorized the pixels (red, green, blue, dummy) 1 sec speedup.

B. Uses several for-loops instead of if else very minor speedup.

C. Less divisions 0.5 sec.

D. Casts the float values to int's without first transforming them to the 0-255 range 0.2 sec.

E. Some minor restructuring 0.2 sec.

iv. Same concept only his code does the vertical pass and horizontal pass at the same time kinda. Easier for the cache. Also he had some smarter reuse of image buffers.

v. Some cache misses, the vectorization is a bit naive with some redundant space. There is probably a smarter memory layout, but I couldn't find it :(