Mixed Language Programming

In a certain program, 1% of the code accounts for 50% of the execution time. This is not unrealistic, a 600-line program might have a 6-line loop where the program spends most of its time.

Assuming:

- It takes 100 person-months (pm) to write the entire program in C
- Assembly code takes 10 times longer to write than C
- Assembly code runs 4 times faster than C.

Compare the following strategies with respect to programming time and execution time.

(1) Write the entire program in C
(2) Write the entire program in assembler
(3) Write the entire program in C then rewrite the critical 1% in assembly code