



W11 Mar 25 (D1) Coprocessor or not?

[Jose Ferreira](#)

[All Sections](#)

These questions are presented under the following assumptions:

- They may be selected to be part of the final exam
- Responses must be posted by the students (not me)
- I will call your attention to any mistakes or wrong content posted in response

N.B.: The source of this question is Patrick R. Schaumont, “[A Practical Introduction to Hardware/Software Codesign](#)”, Problem 9.3, p. 285.

A C function has ten inputs and ten outputs, all of them integers. The function takes 1,000 cycles to execute in software. You need to evaluate if it makes sense to build a coprocessor for this function. Assume that the function takes K cycles to execute in hardware, and that you need Q cycles to transfer a word between the software and the coprocessor over a system bus. Draw a chart that plots Q in terms of K , and indicate what regions in this chart justify a coprocessor.

Subscribe"/>Reply"/>