Q44. There are two methods to execute byte-code programs written in Java. In the first method, an interpreter is used to execute byte-code. In the second method, native code generated by a compiler is executed. In the second method, how many lines of byte-code are at least required, in order to achieve shorter processing time (including compiling time) than the first method, under the conditions below?

[Conditions]

(1) The execution time is proportional to the number of lines in the program.

(2) If a program consisting of 100 lines of byte-code is executed using an interpreter, it takes 0.2 seconds. If the same program is executed after compiling, it takes 0.003 seconds.

(3) It takes 0.1 seconds to compile 100 lines.

(4) In case of the method using a compiler, an overhead of 0.15 seconds is always required for file input/output, compiler startup, and so on, regardless of the number of lines in the program.

(5) Other miscellaneous time such as time for downloading the program file may be ignored.

a) 50 b) 75 c) 125 d) 155