Question 1 (20 points): The pattern of execution of a given program depends not only on the code, the compiler, and the architecture, but also on the data input for the program. For instance a file compressor may follow different execution paths when compressing an mpeg audio file than when compressing ASCII text file. You are studying the performance of a program. You know that the instructions executed by this program can be divided into 4 classes based on the number of cycles required to execute the instruction. Class A instructions take 1 cycle, class B take 2 cycles, class C take 4 cycles and class D take 6 cycles. You run the program with profiling twice, with two different inputs `inputA` and `inputB`. The percentage of instructions of each class for each run is shown below.

Input	**Instruction Class**			
	A	B	C	D
`Input A`	60%	20%	10%	10%
`Input B`	40%	10%	30%	20%

The profiling also reveals that when running with `inputA` the program executes 20% more instructions than when running with `inputB`.

Which run of the program is faster and by how much?