CDA 3103 – Computer Organization (Spring 2005) Quiz # 5

Last Name	:	 First Name	:	
NID	:			

<u>Question:</u> Suppose we have two implementations of the same instruction set architecture (ISA)

For some program,

Machine A has a clock cycle of time 350 ps and a CPI of 1.8 Machine A has a clock cycle of time 450 ps and a CPI of 1.4

Which machine is faster for this program, and by how much?

Answer:

As both machines have same ISA, so instruction count (IC) for that program on these machines will be same.

Execution time = IC * (CPI * (CT		
Execution time for Machine A	=	IC * 1.8 * 350	=	IC * 630 ps
Execution time for Machine B	=	IC * 1.4 * 450	=	IC * 630 ps

So this program is taking same amount of time on both architectures. So <u>for this program</u>, both machines have got same performance.