

**ECE/CS 552: Introduction to Computer Architecture**  
**ASSIGNMENT #1 ERRATA**

**Due Date: In class September 21<sup>st</sup>, 2005**

This homework is to be done individually.

- 2.1 We wish to compare the performance of two different machines. M1 and M2. The following measurements have been made on these machines:

Program	Time on M1	Time on M2
1	10 seconds	5 seconds
2	3 seconds	4 seconds

Which machine is faster for each program and by how much?

- 2.2 Consider the two machines and programs in Exercise 2.1. The following additional measurements were made:

Program	Instructions executed on M1	Instructions executed on M2
1	$200 \times 10^6$	$160 \times 10^6$

Find the instruction execution rate (instructions per second) for each machine when running program 1.

- 2.3 If the clock rates of machines M1 and M2 in Exercise 2.1 are 200 Mhz and 300 Mhz, respectively, find the clock cycles per instruction (CPI) for program 1 on both machines using the data in Exercises 2.1 and 2.2.
- 2.4 Assuming the CPI for program 2 on each machine in Exercise 2.1 is the same as the CPI for program 1 found in Exercise 2.3, find the instruction count for program 2 running on each machine using the execution times from Exercise 2.1
- 2.5 Suppose that M1 in Exercise 2.1 costs \$10,000 and M2 costs \$15,000. If you needed to run program 1 a large number of times (i.e., if you were concerned with throughput instead of response time), which machine would you buy in large quantities? Why?