CMPUT 229 - Computer Organization And Architecture I
Quiz #2 — Winter 2014

CMPUT 229 Honor Code

By turning in the quiz solution for grading, I certify that I have produced the solution in accordance to the academic integrity policies in Section 26.1 of the University of Alberta 2013/2014 Calendar.

Question 1 (10 points):

The table below shows the amount of time (in seconds) spent in different classes of instructions when a given program executes in a machine. A change to the compiler leads to a program that executes fewer floating point (FP) instructions and does not affect the time of any of the other classes of instructions. This compiler improvement leads to a 6% improvement in the total execution time of this program.

What is the reduction, expressed as a percentage, in the time spent in FP instructions?

FP Instructions	INT Instructions	Load/Store Instructions	Branch Instructions
60s	90s	70s	30s

By how much should the time spent in FP instruction be reduced to achieve a total time reduction of 24%?