Quiz: Are you in the Right Class?

This quiz is to take home and review on your own. You should be able to answer the following questions easily. If you have significant problems with these questions, you should consider taking a warm up course.

- Define the following terms: (a) multiplexer (b) full adder and half adder (c) paging (d) segmentation (e) ALU (f) pipeline hazard (g) write back caches

- Write the code sequence for the following code for a machine with powerful addressing modes and general purpose registers.

  While \( x < z \) do \( x := x + y \);

- Draw a block level diagram of a machine with 16 registers, 32-bit instructions, and 3-register ALU operations, and a single address mode (for loads and stores) that adds a displacement in the instruction to a register contents to get a memory address. List the execution steps (what happens in each clock in a pipelined machine) for the following two instructions:
  ADD R1,R2,R3
  LOAD R4,42(R5)