

Due: February 7, 2011

Problem 2

The figure on the right shows an implementation of an **unsigned** multiplier. Please show how a 4-bit multiplication is performed using this hardware. The multiplicand and multiplier are 1101 and 1011, respectively. The multiplicand is already in the register; please include in the figure (on the right) the initial status of the register that is below the ALU. Show the multiplication process using the figures below. Please assume that the cycle is long enough to check a bit, perform a 4-bit addition, a shift, and store the result in a register. Please show what happens cycle by cycle in this multiplier. Show the status of the hardware at the end each particular cycle.

