

## Homework 9

**Due: 2014.12.26 midnight**

**Problem 1** Design a Turing machine that multiplies integers. Assume that you already have a Turing machine that copies that you can use. The machine that copies does the following where  $q$  is the start state.  $q100001 \vdash p1000010000$ .

Your machine should do the following.  $r10^n10^m1 \vdash s10^n10^m10^{nm}$ .