Assignment #3; Due February 17 at start of class

1. Show that prfs are closed under halfway induction. Halfway induction means that each induction step, say at y+1, after calculating the base is computed using the value of the function at **⌊(y+1)/2⌋**. The formal hypothesis is:
   Assume **g** and **h** are already known to be prf, then so is **f**, where
   f(x,0) = g(x)
   f(x,y+1) = h(f(x, ⌊(y+1)/2⌋))

2. Show that prfs are closed under halfway mutual induction. Halfway mutual induction means that each induction step, say at y+1, after calculating the base is computed using the value of the other function at **⌊(y+1)/2⌋**. The formal hypothesis is:
   Assume **g1**, **g2**, **h1** and **h2** are already known to be prf, then so are **f1** and **f2**, where
   f1(x,0) = g1(x); f2(x,0) = g2(x)
   f1(x,y+1) = h1(f2(x, ⌊(y+1)/2⌋)); f2(x,y+1) = h2(f1(x, ⌊(y+1)/2⌋))