Your Name: _____

Names of people you worked with: _____

1. Are you getting enough sleep?

2. After this class, what (if any) kind of math are you looking forward to learning more about?

3. You flip a fair coin twice. You win (at stage 1) if you get 50% or more heads. If you don't get 50% or more heads, you flip the coin two more times and **combine the four flips**. You win (at stage 2) if, after 4 flips you have 50% or more heads.

   What is the overall probability that you win?

   Hint: it might help to write out the 16 different combinations of four flips that can happen.

3. **Solution:** Here are the 16 different ways you can flip the coin 4 times:

   HHHH   HHHT   HHTH   HTHH   THHH   HHTT   HTHT   HTTH
   THTH   THHT   TTHH   TTTH   TTHT   THTT   HTTT   TTTT

   In 12 of those settings, you will win at the first stage.

   In the remaining 4 settings, you win in 1 of them (TTHH) at the second stage.

   P(winning) = 13/16 = 0.8125