

## Math 130: Contemporary Mathematics

### Team Project #1, due Wednesday, February 4

Complete these problems in a group of 3. You may change teams for different assignments if you want. Make sure every member of your team participates in thinking about each problem. Explain your solutions clearly. Part of your grade will be based on your presentation.

1. Section 1.4 problem 14. Carefully explain your reasoning.
2. Section 1.4 problem 15. Carefully explain your reasoning. Make sure you account for all possible contingencies!
3. Explain why the numbers of arrangements of dominos and squares in problems 3 and 4 of the Fibonacci numbers handout from class satisfy the Fibonacci recurrence  $F_n = F_{n-1} + F_{n-2}$ .
4. Find a fruit, vegetable, flower, or plant in the grocery store or in nature which has a Fibonacci number in it. Turn in the object or a photograph of it, and write an explanation of where the number appears. (For an explanation of Fibonacci numbers in nature, see section 2.2 of the text.) Bonus points given for large Fibonacci numbers.