**MAT 375-1**

**HOMEWORK ASG. #7 HAND IN THURSDAY, OCT. 27**

For each problem #1-14, do at least these three things:

- give a brief explanation in words of your counting strategy,
- show the structure of the calculation before simplification, and
- calculate the final number (or probability).

1. Section 5.1, Exercise #6
2. Section 5.1, Exercise #8
3. Section 5.1, Exercise #10
4. Section 5.1, Exercise #14
5. Section 5.1, Exercise #20
6. Section 5.1, Exercise #22

7. Section 5.2, Exercise #4
8. Section 5.2, Exercise #8
9. Section 5.2, Exercise #10
10. Section 5.2, Exercise #12
11. Section 5.2, Exercise #26
12. Section 5.2, Exercise #30
13. Section 5.2, Exercise #36
14. Section 5.2, Exercise #38

15. Two students answer the question:

> "How many arrangements of the letters in the word PROOF have no consecutive O's?"

Student #1 answers: $3! \cdot C(4,2)$
Student #2 answers: $C(5,2) \cdot 3! - 4!$

Both students are correct! (Both answers are 36.) Deduce the counting strategy of each student from the structure of their calculations.