# Homework #9

**Percents**

1. Thirty percent of 25,000 SJSU students exercise daily. How many SJSU students does this represent?

2. At SJSU 5,000 students are full-time workers. If there are 15,000 SJSU students, what *percentage* of SJSU students are full-time workers?

3. Saul Cohn earned a master’s degree from SJSU in 1996 but went back to school and received his Ph.D. in December 2013. His salary went from $28,000 to $50,000 (made up number). What percent increase in salary did Dr. Cohn receive?

**Ratios**

4. In Sociology classes at San Jose State University, there are 4 whites for every 5 Latinos, if there are 1800 total (i.e., whites and Latinos), how many whites and Latinos are there respectively?

**Simple Probability**

5. What is the probability of rolling a two OR a five with a fair die?

6. What is the probability of rolling four threes with a fair die?

**Counting Principle, Permutations, and Combinations**

7. How many 4-digit odd numbers greater than 5,000 can be formed using digits 0-9 and digits may be repeated?

8. Dr. Cohn in his Intro Sociology class on test day chooses between 5 types of multiple-choice questions, 3 types of matching questions, and 2 types of short answer questions. How many different tests are possible?

9. How many different ways can 5 books be arranged on a bookshelf?

10. Twenty SJSU students are running for student body positions including President, Vice President, Treasurer, and Secretary: How many *permutations* are possible if one student can only hold one office?

11. In a certain statistics class, Dr. Cohn wants to pick 3 students out of 5 to answer questions every time there are questions to be answered on the board. How many *combinations* of students are possible?

**Binomials**

12. There are five questions on a test. Each question has four answers. What is the total probability of guessing:

1. **exactly** **2** questions correctly out of five?
2. **2** **OR less** questions correctly out of five?