

Precalculus – Section 8.6 Homework

1. A college student is preparing a course schedule for the next semester. The student must select one of two mathematics courses, one of three science courses, and one of five courses from the social sciences and humanities. How many schedules are possible?

2. In how many ways can a six question true-false exam be answered? (Assume that no questions are omitted.)

3. Four people are taking a long trip in a four-seat car. Three of the people agree to share the driving. In how many different arrangements can the four people sit?

4. How many four digit numbers can be formed under each condition?
 - a. The leading digit cannot be zero.

 - b. The leading digit cannot be zero and no repetition of digits is allowed.

 - c. The leading digit cannot be zero and the number must be less than 5000.

 - d. The leading digit cannot be zero and the number must be even.

5. From a pool of 12 candidates, the offices of president, vice-president, secretary, and treasurer will be filled. In how many ways can the offices be filled?

6. Find the number of distinguishable permutations of the letters in the word Engineering.

7. You can answer any 12 questions from a total of 14 questions on an exam. In how many different ways can you select the 12 questions?

8. A shipment of 25 television sets contains three defective units. In how many ways can a vending company purchase four of these units and receive:
 - a. All good units

 - b. Two good units

 - c. At least two good units

9. A clothing manufacturer interviews 12 people for four openings in the human resources department of the company. Five of the 12 people are women. If all 12 are qualified, in how many ways can the employer fill the four positions if:
 - a. The selection is random

 - b. Exactly two women are selected

10. A six member research committee is to be formed having one administrator, three faculty members, and two students. There are seven administrators, 12 faculty members, and 20 students in contention for the committee. How many six member committees are possible?

