

MATH 107/CCE

Practice Problems

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University of Rhode Island

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1. A recent survey of 400 shoppers yielded the following information: 320 shopped at Filene's, 280 shopped at Macy's, and 100 shopped at Filene's but not at Macy's. How many people shopped at the following:

- (a) Filene's and Macy's ?
- (b) only Macy's ?
- (c) neither Filene's nor Macy's ?

2. A survey of 140 students showed the following:

- 60 take biology
- 64 take finite mathematics
- 70 take history
- 22 take biology and finite mathematics
- 28 take biology and history
- 40 take finite mathematics but not history
- 12 take all three

How many students:

- (a) take history but neither of the other two ?
- (b) take at least one of the three ?
- (c) take exactly one of the three ?
- (d) do not take any of the three ?

3. A group of eight women and ten men must select a six-person committee. How many committees are possible if it must consist of the following ?

- (a) four women and two men.
- (b) at least four women.
- (c) any mixture of men and women.
- (d) three women as president, vice president, and secretary and three men as the members.

4. A password to a computer consists of five characters which are all different letters.

(a) How many different passwords are possible ?

(b) How many different passwords with five consecutive letters are possible ?

5. The 5/35 lottery is currently played in Arizona, Connecticut, Massachusetts, and some other states.

(a) Find the probability of winning first prize (that is, picking all five winning numbers).

(b) Find the probability of winning second prize (that is, picking four of the five winning numbers).

(c) Find the probability of winning third prize (that is, picking three of the five winning numbers).