

Math 1030-6      Midterm Exam 1

02/18/2009

Write only with black or blue pen. Answers written in pencil will not be considered.  
Read the exercises carefully. Show your work and circle your answers.

Exercise 1 (12pt):

In a class of 52 students, 40 students went to the mountains during their Christmas vacation. Of those who went to the mountains, 16 went hiking, 22 went skiing, and 10 didn't go skiing or hiking.

Construct a Venn diagram with the above information and determine:

- a) How many students went both hiking and skiing.
- b) The percentage of students from the class who only went skiing.
- c) The relative difference between the students who went skiing and the students who went hiking.

Exercise 2 (6pt): Given the following deductive argument, use a Venn diagram to determine if the conclusions are correct.

Premise 1: If you drink a lot of tea, you go to the restroom too often. If you go to the restroom too often, you waste a lot of time.

Premise 2: Andy goes at the restroom too often.

Conclusion 1: Andy drinks a lot of tea.

Conclusion 2: People that don't drink a lot of tea don't waste a lot of time.

Exercise 3 (8pt): Represent the following sets using Venn Diagrams:

$$- [(A \cap B) - C] \cup [C - (A \cup B)]$$

$$- [(B \cap (A \cup C)) - (A \cap C)]$$

$$- (A \cup B) - C$$

Exercise 4 (5pt): What is the volume of a container that has a base of  $7000 \text{ cm}^2$  and is 1.3 meters high?

(volume= base\*high ; 1m=100cm)

Exercise 5 (7pt) (done in class): The 80% of the students of this class doesn't like math. Of them:

- The 20% didn't want to take the class;
- The 60% doesn't like the subject at all;
- Of the people that don't like the subject at all, only the 30% is from an history major.

Which percentage of the total number of students that don't like the class at all and are not from an history major?

Exercise 6 (7pt): Movie tickets sell for \$8.00 each, but if you buy 4 or more you get \$1.00 off each ticket. What percent discount is this?

Exercise 7 (6pt): Write the following numbers in scientific notation specifying the magnitude.

a) 3254986000.54

b) 0.000014394562

Exercise 8 (9pt): Compute the following operations in scientific notation.

a)  $(2,019,000 * 5,000,982,340)/(0.05489342)$

b)  $(2,389,876)^2/(100,658,231)^3$

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