1 Answer Key for exam3162sp07_v1

1. ◇ i) 7.2290077 ii) B iii) 1072.290077 iv) 1071.0

2. ◇ i) 16033.34244 ii) 2786.65756

3. ◇ Monthly saving: 4760.814261

4. ◇

(a)(i)	$U \setminus (A \bigcup B \bigcup C)$	(a)(ii)	$C \setminus A$
(b)(i)	$\{0, 2\}$	(b)(ii)	$\{0, 1\}$

5. ◇ a) 45697600 b) 45521840

6. ◇ (a) 62 (b) 9

6. A survey of 100 College students revealed the following:

   - 40 students read Time magazine.
   - 52 students read Newsweek magazine.
   - 45 students read Forbes magazine.
   - 21 students read Time and Newsweek magazines.
   - 19 students read Time and Forbes magazines.
   - 23 students read Newsweek and Forbes magazines.
   - 17 students read all three magazines.

   Based on the above information, answer the following:

   (a)How many students surveyed read only one of the three magazines?

   Answer: [ ]

   (b)How many students surveyed read none of the three magazines?

   Answer: [ ]

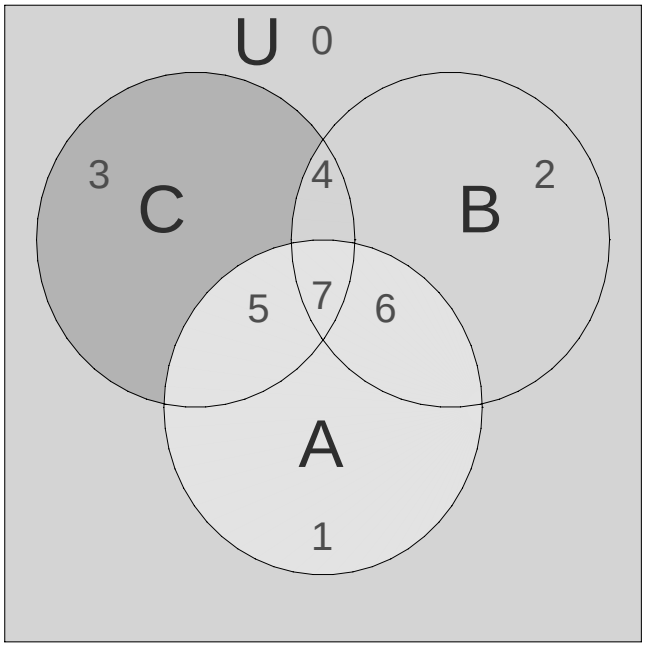
5. (a)License plates in a State are issued that consist of 4 letters followed by 2 digits. How many different license plates are possible under this arrangement?

Answer:

(b)How many of the license plates in the State above **do not** have the letter O adjacent to the number 0?

Answer:

(b) Consider the usual Venn diagram for the three sets where we have marked various regions by numbers. Describe each of the sets below by listing the regions which give the set. For example the set A will be listed as $\{1, 5, 6, 7\}$



(i)$U \setminus (A \bigcup C) = \{$ $\quad$ $\}$

(ii)$U \setminus (B \bigcup C) = \{$ $\quad$ $\}$

4. (a) Let U denote the universal set of all students in the College of Arts and Sciences. Consider the sets:

$$A = \{x \in U | x \text{ is male}\}$$

$$B = \{x \in U | x \text{ is a Biology Major}\}$$

$$C = \{x \in U | x \text{ is left handed}\}$$

Find the following subsets of U using these set names and standard set operations. For example:

The set of all males who are Biology Majors is $A \bigcap B$.

(i)The set of all right handed females who are not Biology Majors is : $\boxed{}$

(ii)The set of all students who are left handed females is : $\boxed{}$

3. Mrs. Hartman saves monthly for her retirement. She is expecting to build a retirement fund of $\$\ 2,900,000$ in her career of 21 years.

   If her retirement account is expected to earn money at a rate of 7.5%, how much is she saving per month?

   Give your answer correct to the nearest penny.

Answer: $\$$ [ ]

2. Mary bought a new car with $ 2500 down and is paying $ 340 monthly payment at a rate of 9.5%. She has to make the payments for four years. She forgot how much the original cost of the car was.

   i) Determine the original cost of the car. Answer $ [ ]

   ii) Determine the total amount of interest paid by Mary over the four year loan.

   Answer: $ [ ]

1. John wants to borrow $ 1000 for repairs on his house. Bank A offers him 7.00 % annual rate of interest compounded monthly.

   i) What is the effective interest rate offered by Bank A? Answer:

   ii) Another bank B offers 7.10% simple rate. Should he choose Bank A or Bank B ?

   iii) If he borrows $ 1000 for one year how much **total payment** would he make to **Bank A**? Answer:

   iv) If he borrows $ 1000 for one year how much **total payment** would he make to **Bank B**? Answer:

DEPARTMENT OF MATHEMATICS

Ma 162 Third Exam v1 Spring 2007

DO NOT TURN THIS PAGE UNTIL YOU ARE INSTRUCTED TO DO SO.

Instructions: Cell phones must be OFF and put away before you open this exam. **Be sure your name, section, and student number are filled in below. Also be sure to put your initials on each exam page.** There are 6 problems and 8 pages (including this one) on the exam.
Show your work and put your answers in the answer boxes provided. **Unsupported or misplaced answers will receive no credit and no partial credit will be given for an incorrect answer.** You may use calculators for completing numerical calculations. The test has been carefully checked and its notation is consistent with the homework problems. No additional details will be provided **during the exam.**

Problem	Maximum Score	Actual Score
1	20	
2	20	
3	20	
4	16	
5	10	
6	14	
Total	100	

Please fill in the information below.

NAME: _____ **Section:** _____

SECTION NO: _____