

MATH 110 Summer 2019
Test 2 Practice Problems
(This is NOT a comprehensive review!!!)

Notation/Formulas:

1. Find the cardinality of the following set.

$$\{2, 4, 6, 8, 10, \dots, 126\}$$

2. Let $U = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10\}$, $A = \{2, 5, 7, 9\}$, $B = \{1, 2, 3\}$, and $C = \{5, 8, 9, 10\}$.

a. Find $(A' \cup B) \cap C$.

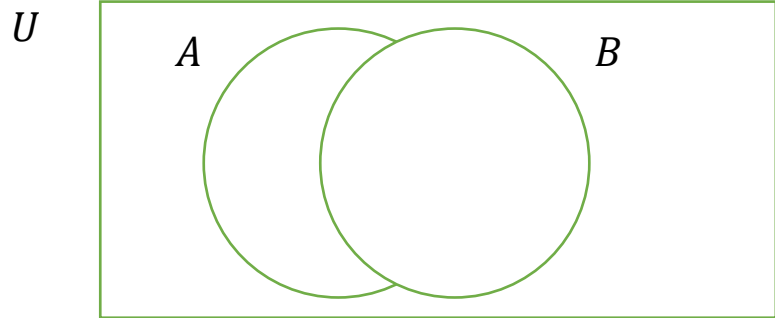
b. Determine whether the statement is true or false: $C \subseteq B'$

3. A Mazda Miata features 10 different upgrade options; you can choose to add any of these when you purchase the car.
- How many different versions of Miatas can you buy?
 - What is the minimum number of upgrade options which must be available if the Mazda dealership advertises that it offers over 5,000 versions of Miatas?

4. Draw a Venn diagram to show the set.

$$(A \cup B) \cap C'$$

5. Use the given information to find the number of elements in each region.



$$n(A) = 24, n(B) = 36, n(A \cap B) = 8, n(U) = 100$$

6. In a survey of 1,000 people, it was reported that 670 people liked McDonald's, 750 people liked Chick-fil-A, and 45 people liked neither restaurant.
- How many people liked both McDonald's and Chick-fil-A?
 - How many people liked only Chick-fil-A?

7. Write the sentence in symbolic form. Use the following:

p : I eat too much.

q : I order food.

r : I will feel well.

If I order food and eat too much, then I will not feel well.

8. Determine the truth value of the compound statement, given that p is false, q is true, and r is false.

$$(\sim p \vee q) \wedge (p \wedge \sim r)$$

9. Construct a truth table for the compound statement.

$$(p \rightarrow \sim q) \vee (p \wedge q)$$

p	q	$(p$	\rightarrow	$\sim q)$	\vee	$(p$	\wedge	$q)$
T	T							
T	F							
F	T							
F	F							

