TEST 2

Question 1
Suppose A is a set of numbers divisible by 5, B is a set of numbers divisible by 10 and 3, C is a set of numbers divisible by 2 and D is a set of numbers divisible by 20. Please indicate which statements below are correct:

Intersection of A and B is empty
1. Intersection of A and D is not empty
2. C is a subset of A
3. D is a subset of A
4. Intersection of A and B is a proper subset of D
5. C and B are equivalent

Question 2

Let A be a set of all positive whole numbers divisible by 6 and B be a set of all numbers divisible by 3. Take a complement of A and intersect with B. Please describe the resulting set.

Question 3

Let A be a set of all buildings in Boston, B - set of all residents of Boston, C -set of all female residents of Massachusetts and D -set of all mothers in Massachusetts. Please describe relationships between these sets

Question 4
Let A={2,3,7,8,11,13} and B={1,4,5,6} Take a union of A and B and make an intersection with a complement of set C={1,8,3,5} What would be a resulting set?

Question 5

Let A={1,2, 3} and B={1,6, 9,8} Take a complement an intersection of A and B and make an intersection with set C={1,8,3,5} What would be a resulting set?

Question 6
Let A={1,2,3} and B={4,5,9} Take a complement an intersection of A and B and make union with set C={1,8,3,5} What would be a resulting set?

Question 7
Let A={a,b,c,d}
Please list all subsets of A

Question 8
Suppose a set has n elements. How many subsets we can form? Please provide a proof for your answer.

Question 9
Suppose set C is a complement of a union of sets A and B. Please give an alternative (but equivalent) definition of C using De-Morgan Laws

Question 10
Suppose set C is a complement of an intersection of sets A and B. Please give an alternative (but equivalent) definition of C using De-Morgan Laws