1. Write a function that gets a list as input and returns a new list that contains all the numbers of the first list minus all the duplicates.

2. Write a Python program which accepts a sequence of comma-separated 4-digit binary numbers as its input and prints the numbers that are divisible by 5 in a comma-separated sequence.
   **Sample input:** 0001,0010,0011,0100,0101,0110,0111,1010
   **Output:** 0101,1010

3. Write a custom function that converts a decimal number to a binary number.

4. Write a custom function that converts a binary number to a decimal number.

5. What will be printed from line A-F for the following code?

   ```python
   a = 60  # 60 = 0011 1100
   b = 13  # 13 = 0000 1101
   c = 0
   
c = a & b;
   print (f"The value of c is {c}" )  # line A
   
c = a | b;
   print (f"The value of c is {c}" )  # line B
   
c = a ^ b;
   print (f"The value of c is {c}" )  # line C
   
c = ~a;
   print (f"The value of c is {c}" )  # line D
   
c = a << 2;
   print (f"The value of c is {c}" )  # line E
   
c = a >> 2;
   print (f"The value of c is {c}" )  # line F
   ```

6. Write a program that reads two text files, take one sentence from each text file and print them one after another.

   Example: If line1 is from text1.txt and line2 is from text2.txt, then print line1
            line2
   Repeat this for all the lines of the two files.

7. Check whether a given string is a pangram or not. A pangram is a sentence which contains every letter of alphabet at least once.
   Example of a pangram is: 'The quick brown fox jumps over the lazy dog'.

8. Write a Python program to get all possible unique subsets from a set of distinct integers.
   Example: If the input set of integers are: [1,2,3], then the output is:
            [[] , [3], [2], [2, 3], [1], [1, 3], [1, 2], [1, 2, 3]]
9. Write a function that generates a random password which meets the following conditions:
   • Length = 10
   • At least 2 capital letters, at least 2 small letters and at least 2 numbers.
   Example: ZlSyx0gDbX

10. Write a Python class named Rectangle constructed by a length and width and a method which will compute the area of a rectangle.

11. Write a Python class named Circle constructed by a radius and two methods which will compute the area and the perimeter of a circle.

12. Bubble Sort is the simplest sorting algorithm that works by repeatedly swapping the adjacent numbers if they are in the wrong order.
   Write a function that implements the bubble sort algorithm.
   Example:
   First Pass:
   ( 5 1 4 2 8 ) → ( 1 5 4 2 8 ) the algorithm compares the first two numbers, and swaps them since 5 > 1.
   ( 1 5 4 2 8 ) → ( 1 4 5 2 8 ), Swap since 5 > 4
   ( 1 4 5 2 8 ) → ( 1 4 2 5 8 ), Swap since 5 > 2
   ( 1 4 2 5 8 ) → ( 1 4 2 5 8 ), Now, since these numbers are already in order (8 > 5), algorithm does not swap them.

   Second Pass:
   ( 1 4 2 5 8 ) → ( 1 4 2 5 8 )
   ( 1 4 2 5 8 ) → ( 1 2 4 5 8 ), Swap since 4 > 2
   ( 1 2 4 5 8 ) → ( 1 2 4 5 8 )
   ( 1 2 4 5 8 ) → ( 1 2 4 5 8 )
   Now, the array is already sorted, but our algorithm does not know if it is completed. The algorithm needs one whole pass without any swap to know it is sorted.

   Third Pass:
   ( 1 2 4 5 8 ) → ( 1 2 4 5 8 )
   ( 1 2 4 5 8 ) → ( 1 2 4 5 8 )
   ( 1 2 4 5 8 ) → ( 1 2 4 5 8 )
   ( 1 2 4 5 8 ) → ( 1 2 4 5 8 )

   Now, try to implement the bubble sort algorithm using a recursive function to sort a list containing n number of numbers.

13. Write a function that prints all the combination of size r from a list of size n.
   Example: Suppose, our list is [1,2,3,4]. So, n = 4.
   r = 2, so, the output should be:
   Output:
   1 2
   1 3
   1 4
   2 3
   2 4
   3 4