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| Question 1: |
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| Write a program that calculates and prints the value according to the given formula: |
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| Q = Square root of [(2 \* C \* D)/H] |
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| Following are the fixed values of C and H: |
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| C is 50. H is 30. |
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| D is the variable whose values should be input to your program in a comma-separated sequence. |
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| Example |
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| Let us assume the following comma separated input sequence is given to the program: |
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| 100,150,180 |
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| The output of the program should be: |
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18,22,24

import math

numbers = input("Provide D: ")

numbers = numbers.split(',')

result\_list = []

for D in numbers:

Q = round(math.sqrt(2 \* 50 \* int(D) / 30))

result\_list.append(Q)

print(result\_list)

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| Question 2: |
| Write a program which takes 2 digits, X,Y as input and generates a 2-dimensional array. The element value in the i-th row and j-th column of the array should be i\*j. | |
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| Note: i=0,1.., X-1; j=0,1,¡­Y-1. |
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| Example |
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| Suppose the following inputs are given to the program: |
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| 3,5 |
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| Then, the output of the program should be: |
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| [[0, 0, 0, 0, 0], [0, 1, 2, 3, 4], [0, 2, 4, 6, 8]] |
| x = int(raw\_input())  y = int(raw\_input())  l=[]  for i in range(x):  inner\_list = []  for j in range(y):  inner\_list.append((i\*j))  l.append(inner\_list)  print l |
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Question 3:

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| Write a program that accepts a comma separated sequence of words as input and prints the words in a comma-separated sequence after sorting them alphabetically. |
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| Suppose the following input is supplied to the program: |
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| without,hello,bag,world |
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| Then, the output should be: |
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bag,hello,without,world

items=[x for x in input("Enter Words :").split(',')]

items.sort()

print(','.join(items))

Question 4:

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| Write a program that accepts a sequence of whitespace separated words as input and prints the words after removing all duplicate words and sorting them alphanumerically. |
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| Suppose the following input is supplied to the program: |
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| --- |
| hello world and practice makes perfect and hello world again |
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| Then, the output should be: |
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again and hello makes perfect practice world

Question 5:

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| Write a program that accepts a sentence and calculate the number of letters and digits. |
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| Suppose the following input is supplied to the program: |
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| --- |
| hello world! 123 |
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| Then, the output should be: |
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| --- |
| LETTERS 10 |
|  |

DIGITS 3

lpha,string=0,"DIGITS"

for i in string:

if (i.isalpha()):

alpha+=1

print("Number of Digit is", len(string)-alpha)

print("Number of Alphabets is", alpha)

Question 6:

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| A website requires the users to input username and password to register. Write a program to check the validity of password input by users. |
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| Following are the criteria for checking the password: |
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| 1. At least 1 letter between [a-z] |
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| --- |
| 2. At least 1 number between [0-9] |
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| --- |
| 1. At least 1 letter between [A-Z] |
|  |

|  |
| --- |
| 3. At least 1 character from [$#@] |
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| --- |
| 4. Minimum length of transaction password: 6 |
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| 5. Maximum length of transaction password: 12 |
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| Your program should accept a sequence of comma separated passwords and will check them according to the above criteria. Passwords that match the criteria are to be printed, each separated by a comma. |
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| Example |
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| If the following passwords are given as input to the program: |
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| ABd1234@1,a F1#,2w3E\*,2We3345 |
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| Then, the output of the program should be: |
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ABd1234@1

import re

passwords = input("Type in: ")

passwords = passwords.split(",")

accepted\_pass = []

for i in passwords:

if len(i) < 6 or len(i) > 12:

continue

elif not re.search("([a-z])+", i):

continue

elif not re.search("([A-Z])+", i):

continue

elif not re.search("([0-9])+", i):

continue

elif not re.search("([!@$%^&])+", i):

continue

else:

accepted\_pass.append(i)

print((" ").join(accepted\_pass))