1. Given a list of numbers, create a function that removes 25% from every number in the list except the smallest number, and adds the total amount removed to the smallest number.

Examples:

show\_the\_love([4, 1, 4]) ➞ [3, 3, 3]

show\_the\_love([16, 10, 8]) ➞ [12, 7.5, 14.5]

show\_the\_love([2, 100]) ➞ [27, 75]

def show\_the\_love(in\_list):

out\_list = in\_list.copy()

sum\_num = 0

for ele in range(len(out\_list)):

if out\_list[ele] is not min(out\_list):

sum\_num += out\_list[ele]/4

out\_list[ele] = out\_list[ele]-(out\_list[ele]/4)

out\_list[out\_list.index(min(out\_list))] = sum\_num +min(out\_list)

print(f'show\_the\_love({in\_list}) ➞ {out\_list}')

show\_the\_love([4, 1, 4])

show\_the\_love([16, 10, 8])

show\_the\_love([2, 100])

show\_the\_love([4, 1, 4]) ➞ [3.0, 3.0, 3.0]

show\_the\_love([16, 10, 8]) ➞ [12.0, 7.5, 14.5]

show\_the\_love([2, 100]) ➞ [27.0, 75.0]

2. Create a function that takes in two words as input and returns a list of three elements, in the following order:

1.Shared letters between two words. 2.Letters unique to word 1. 3.Letters unique to word 2.

Each element should have unique letters, and have each letter be alphabetically sorted.

Examples:

letters("sharp", "soap") ➞ ["aps", "hr", "o"]

letters("board", "bored") ➞ ["bdor", "a", "e"]

letters("happiness", "envelope") ➞ ["enp", "ahis", "lov"]

letters("kerfuffle", "fluffy") ➞ ["flu", "ekr", "y"]

# Even with multiple matching letters (e.g. 3 f's), there should

# only exist a single "f" in your first element.

letters("match", "ham") ➞ ["ahm", "ct", ""]

# "ham" does not contain any letters that are not found already

# in "match".

def letters(s\_one,s\_two):

s\_one\_set = set(s\_one)

s\_two\_set = set(s\_two)

out\_list = []

out\_list.append(''.join(sorted(s\_one\_set.intersection(s\_two\_set))))

out\_list.append(''.join(sorted(s\_one\_set.difference(s\_two\_set))))

out\_list.append(''.join(sorted(s\_two\_set.difference(s\_one\_set))))

print(f'letters{s\_one,s\_two} ➞ {out\_list}')

letters("sharp", "soap")

letters("board", "bored")

letters("happiness", "envelope")

letters("kerfuffle", "fluffy")

letters("match", "ham")

letters('sharp', 'soap') ➞ ['aps', 'hr', 'o']

letters('board', 'bored') ➞ ['bdor', 'a', 'e']

letters('happiness', 'envelope') ➞ ['enp', 'ahis', 'lov']

letters('kerfuffle', 'fluffy') ➞ ['flu', 'ekr', 'y']

letters('match', 'ham') ➞ ['ahm', 'ct', '']

3. Write a function that pairs the first number in an array with the last, the second number with the second to last, etc.

Examples:

pairs([1, 2, 3, 4, 5, 6, 7]) ➞ [[1, 7], [2, 6], [3, 5], [4, 4]]

pairs([1, 2, 3, 4, 5, 6]) ➞ [[1, 6], [2, 5], [3, 4]]

pairs([5, 9, 8, 1, 2]) ➞ [[5, 2], [9, 1], [8, 8]]

pairs([]) ➞ []

def pairs(in\_list):

in\_list\_clone = in\_list.copy()

output = []

while True:

if len(in\_list) > 0:

if len(in\_list) == 1:

output.append([in\_list[0],in\_list.pop(0)])

else:

output.append([in\_list.pop(0),in\_list.pop(-1)])

else:

break

print(f'pairs({in\_list\_clone}) ➞ {output}')

pairs([1, 2, 3, 4, 5, 6, 7])

pairs([1, 2, 3, 4, 5, 6])

pairs([5, 9, 8, 1, 2])

pairs([])

pairs([1, 2, 3, 4, 5, 6, 7]) ➞ [[1, 7], [2, 6], [3, 5], [4, 4]]

pairs([1, 2, 3, 4, 5, 6]) ➞ [[1, 6], [2, 5], [3, 4]]

pairs([5, 9, 8, 1, 2]) ➞ [[5, 2], [9, 1], [8, 8]]

pairs([]) ➞ []

4. Write a function that adds two numbers. The catch, however, is that the numbers will be strings.

Examples:

add\_str\_nums("4", "5") ➞ "9"

add\_str\_nums("abcdefg", "3") ➞ "-1"

add\_str\_nums("1", "") ➞ "1"

add\_str\_nums("1874682736267235927359283579235789257", "32652983572985729") ➞ "1874682736267235927391936562808774986"

def add\_str\_nums(in\_one,in\_two):

in\_one = in\_one if len(in\_one) > 0 else "0"

in\_two = in\_two if len(in\_two) > 0 else "0"

if in\_one.isdigit() == False or in\_two.isdigit() == False:

output = -1

else:

output = int(in\_one)+int(in\_two)

print(f'add\_str\_nums{in\_one,in\_two} ➞ {str(output)}')

add\_str\_nums("4", "5")

add\_str\_nums("abcdefg", "3")

add\_str\_nums("1", "")

add\_str\_nums("1874682736267235927359283579235789257", "32652983572985729")

add\_str\_nums('4', '5') ➞ 9

add\_str\_nums('abcdefg', '3') ➞ -1

add\_str\_nums('1', '0') ➞ 1

add\_str\_nums('1874682736267235927359283579235789257', '32652983572985729') ➞ 1874682736267235927391936562808774986

5. lPaeesh le pemu mnxit ehess rtnisg! Oh, sorry, that was supposed to say: Please help me unmix these strings!

Somehow my strings have all become mixed up; every pair of characters has been swapped. Help me undo this so I can understand my strings again.

Examples:

unmix("123456") ➞ "214365"

unmix("hTsii s aimex dpus rtni.g") ➞ "This is a mixed up string."

unmix("badce") ➞ "abcde"

def unmix(in\_string):

output = ''

for ele in range(0,len(in\_string)-1,2):

output += in\_string[ele+1]+in\_string[ele]

if (len(in\_string)%2 != 0 and ele == len(in\_string)//2 ):

output += in\_string[-1]

print(f'unmix({in\_string}) ➞ {output}')

unmix("123456")

unmix("hTsii s aimex dpus rtni.g")

unmix("badce")

unmix(123456) ➞ 214365

unmix(hTsii s aimex dpus rtni.g) ➞ This is a mixed up string.

unmix(badce) ➞ abcde