Question 1

Create a function that takes a number as an argument and returns True or False depending

on whether the number is symmetrical or not. A number is symmetrical when it is the same as

its reverse.

Examples

is\_symmetrical(7227) ➞ True

is\_symmetrical(12567) ➞ False

is\_symmetrical(44444444) ➞ True

is\_symmetrical(9939) ➞ False

is\_symmetrical(1112111) ➞ True

Ans1

def is\_symmetrical(num):

# Convert the number to a string

num\_str = str(num)

# Check if the string is the same as its reverse

return num\_str == num\_str[::-1]

print(is\_symmetrical(7227)) # True

print(is\_symmetrical(12567)) # False

print(is\_symmetrical(44444444)) # True

print(is\_symmetrical(9939)) # False

print(is\_symmetrical(1112111)) # True

Question 2

Given a string of numbers separated by a comma and space, return the product of the

numbers.

Examples

multiply\_nums("2, 3") ➞ 6

multiply\_nums("1, 2, 3, 4") ➞ 24

multiply\_nums("54, 75, 453, 0") ➞ 0

multiply\_nums("10, -2") ➞ -20

Ans2

def multiply\_nums(nums\_str):

nums\_list = [int(num) for num in nums\_str.split(', ')]

product = 1

for num in nums\_list:

product \*= num

return product

print(multiply\_nums("2, 3")) # 6

print(multiply\_nums("1, 2, 3, 4")) # 24

print(multiply\_nums("54, 75, 453, 0")) # 0

print(multiply\_nums("10, -2")) # -20

Question 3

Create a function that squares every digit of a number.

Examples

square\_digits(9119) ➞ 811181

square\_digits(2483) ➞ 416649

square\_digits(3212) ➞ 9414

Notes

The function receives an integer and must return an integer.

Ans3

def square\_digits(num):

num\_str = str(num)

result\_str = ''.join(str(int(digit)\*\*2) for digit in num\_str)

result = int(result\_str)

return result

print(square\_digits(9119)) # 811181

print(square\_digits(2483)) # 416649

print(square\_digits(3212)) # 9414

Question 4

Create a function that sorts a list and removes all duplicate items from it.

Examples

setify([1, 3, 3, 5, 5]) ➞ [1, 3, 5]

setify([4, 4, 4, 4]) ➞ [4]

setify([5, 7, 8, 9, 10, 15]) ➞ [5, 7, 8, 9, 10, 15]

setify([3, 3, 3, 2, 1]) ➞ [1, 2, 3]

Ans4

def setify(lst):

result\_set = set(sorted(lst))

result = list(result\_set)

return result

print(setify([1, 3, 3, 5, 5])) # [1, 3, 5]

print(setify([4, 4, 4, 4])) # [4]

print(setify([5, 7, 8, 9, 10, 15])) # [5, 7, 8, 9, 10, 15]

print(setify([3, 3, 3, 2, 1])) # [1, 2, 3]

Question 5

Create a function that returns the mean of all digits.

Examples

mean(42) ➞ 3

mean(12345) ➞ 3

mean(666) ➞ 6

Notes

 The mean of all digits is the sum of digits / how many digits there are (e.g. mean of digits in

512 is (5+1+2)/3(number of digits) = 8/3=2).

* The mean will always be an integer.

Ans5

def mean(num):

num\_str = str(num)

digit\_sum = sum(int(digit) for digit in num\_str)

num\_digits = len(num\_str)

mean = digit\_sum // num\_digits

return mean

print(mean(42)) # 3

print(mean(12345)) # 3

print(mean(666)) # 6