Question1. Write a function that stutters a word as if someone is struggling to read it. The first two letters are repeated twice with an ellipsis ... and space after each, and then the word is pronounced with a question mark ?.

**Examples**

stutter("incredible") ➞ "in... in... incredible?"

stutter("enthusiastic") ➞ "en... en... enthusiastic?"

stutter("outstanding") ➞ "ou... ou... outstanding?"

Hint :- Assume all input is in lower case and at least two characters long.

def stutter(word):

# Take the first two letters and repeat them with an ellipsis and space

return f"{word[:2]}... {word[:2]}... {word}?"

# Examples

print(stutter("incredible")) # Output: "in... in... incredible?"

print(stutter("enthusiastic")) # Output: "en... en... enthusiastic?"

print(stutter("outstanding")) # Output: "ou... ou... outstanding?"

Question 2.Create a function that takes an angle in radians and returns the corresponding angle in degrees rounded to one decimal place.

### Examples

radians\_to\_degrees(1) ➞ 57.3

radians\_to\_degrees(20) ➞ 1145.9

radians\_to\_degrees(50) ➞ 2864.8

import math

def radians\_to\_degrees(radians):

# Convert radians to degrees

degrees = radians \* (180 / math.pi)

# Return the result rounded to 1 decimal place

return round(degrees, 1)

# Example usage

print(radians\_to\_degrees(1))

print(radians\_to\_degrees(20))

print(radians\_to\_degrees(50))

Question 3. In this challenge, establish if a given integer num is a Curzon number. If 1 plus 2 elevated to num is exactly divisible by 1 plus 2 multiplied by num, then num is a Curzon number.

Given a non-negative integer num, implement a function that returns True if num is a Curzon number, or False otherwise.

### Examples

is\_curzon(5) ➞ True

# 2 \*\* 5 + 1 = 33

# 2 \* 5 + 1 = 11

# 33 is a multiple of 11

is\_curzon(10) ➞ False

# 2 \*\* 10 + 1 = 1025

# 2 \* 10 + 1 = 21

# 1025 is not a multiple of 21

is\_curzon(14) ➞ True

# 2 \*\* 14 + 1 = 16385

# 2 \* 14 + 1 = 29

# 16385 is a multiple of 29

def is\_curzon(num):

# Calculate 2^num + 1

power\_part = 2 \*\* num + 1

# Calculate 2\*num + 1

product\_part = 2 \* num + 1

# Check if power\_part is divisible by product\_part

return power\_part % product\_part == 0

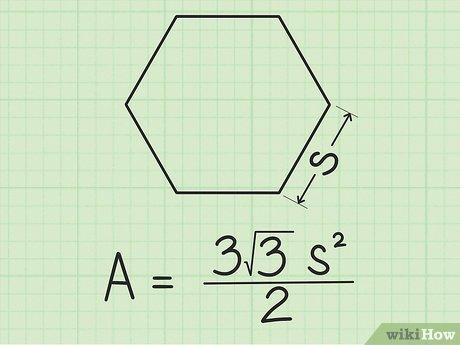
# Example usage

print(is\_curzon(5)) # Output: True

print(is\_curzon(10)) # Output: False

print(is\_curzon(14)) # Output: True

Question 4.Given the side length x find the area of a hexagon.



### Examples

area\_of\_hexagon(1) ➞ 2.6

area\_of\_hexagon(2) ➞ 10.4

area\_of\_hexagon(3) ➞ 23.4

import math

def area\_of\_hexagon(side):

# Calculate the area using the formula

area = (3 \* math.sqrt(3) / 2) \* (side \*\* 2)

return round(area, 1)

# Example usage

print(area\_of\_hexagon(1)) # Output: 2.6

print(area\_of\_hexagon(2)) # Output: 10.4

print(area\_of\_hexagon(3)) # Output: 23.4

Question 5. Create a function that returns a base-2 (binary) representation of a base-10 (decimal) string number. To convert is simple: ((2) means base-2 and (10) means base-10) 010101001(2) = 1 + 8 + 32 + 128.

Going from right to left, the value of the most right bit is 1, now from that every bit to the left will be x2 the value, value of an 8 bit binary numbers are (256, 128, 64, 32, 16, 8, 4, 2, 1).

### Examples

binary(1) ➞ "1"

# 1\*1 = 1

binary(5) ➞ "101"

# 1\*1 + 1\*4 = 5

binary(10) ➞ "1010"

# 1\*2 + 1\*8 = 10

def binary(decimal):

# Convert decimal to binary using bin() and slice off the '0b' prefix

return bin(decimal)[2:]

# Example usage

print(binary(1)) # Output: "1"

print(binary(5)) # Output: "101"

print(binary(10)) # Output: "1010"