

Python

1. Absolute value:

Write a function that calculates and prints the absolute value of a given number defined by

$$\text{absolute}(x) = |x|$$

2. Circle area:

Define a function that calculates and returns the area of a circle given the radius as input

$$A = \pi r^2$$

3. Flow of execution

What is printed by the Python code?

```
def f1():  
    print('Hi')  
  
def f2():  
    print('Lo')  
  
f2()  
f1()  
f1()
```

4. Distance Calculator

Write a function that calculates the distance between two points in the Cartesian coordinate system accepting four arguments: x coordinate of point 1(x1), y coordinate of point 1(y1), x coordinate of point 2(x2) and y coordinate of point 2(y2).

$$\text{distance} = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

5. XOR logic

The exclusive or(XOR) is a logical operator that accepts two inputs of type Boolean. The operator outputs 'True' if either of the inputs are true but not both. Write a function that can evaluate and prints the XOR given two Boolean inputs.

P	Q	P xor Q
True	True	False
True	False	True
False	True	True
False	False	False

XOR truth table

6. Fix the following buggy code

Try to figure out the problem with the following code and fix the error then test the code by calling the function with valid inputs

```
def mysum(x, y)
total = x + y
    print(total)
```

7. Character SHIFT

Write a function that takes a character (a single letter string) and prints out the letter that comes after it.

```
def next_char(character):
    # your code goes here
```

```
>>> next_char('a')    # Results 'b'
>>> next_char('f')    # Results 'g'
```

CLUE

```
>>> help(ord)
Help on built-in function ord in module builtins:

ord(...)
    ord(c) -> integer

    Return the integer ordinal of a one-character string.

>>> help(chr)
Help on built-in function chr in module builtins:

chr(...)
    chr(i) -> Unicode character

    Return a Unicode string of one character with ordinal i; 0 <= i <= 0x10ffff.
```