

# Functions in Python

## 1. Introduction:

Functions are reusable blocks of code that perform a specific task. They improve modularity and reduce redundancy.

## 2. Defining Functions:

```
def greet():  
    print("Hello")
```

## 3. Calling Functions:

```
greet()
```

## 4. Parameters and Arguments:

```
def add(a, b):  
    return a + b
```

## 5. Return Statement:

Functions can return values using return.

## 6. Default Arguments:

```
def power(x, y=2):  
    return x ** y
```

## 7. Variable Length Arguments:

```
def display(*args):  
    for item in args:  
        print(item)
```

## 8. Scope of Variables:

- Local Scope
- Global Scope

## 9. Lambda Functions:

Short anonymous functions:

```
square = lambda x: x * x
```

#### 10. Practice Questions:

1. Write a function to find factorial of a number.
2. Create a function to check for prime numbers.
3. Define a function that reverses a string.
4. Create a calculator using functions.
5. Write a function with variable length arguments.

#### 11. Summary:

Functions promote code reuse and readability. They are foundational for structuring large Python programs.