Python installation:

Watch: https://www.youtube.com/watch?v=g-XF5PuAuLo

Functions in Python

One-line explanation:

A **function** is a block of code that performs a task and can be reused anytime.

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1. What is a Function?

Explanation:
A function lets us group some statements and run them whenever needed.

Example:

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

To call (run) the function:

```
greet()
```

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2. Why Do We Use Functions?

Explanation:
Functions avoid repeating the same code again and again.

Example:

```
def welcome():
    print("Welcome to Python Class!")
```

```
welcome()   # call 1
welcome()   # call 2
```

---

3. Function With Parameters

Explanation:
A parameter is a value we give to the function.

Example:

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

greet("Amit")
greet("Sara")
```

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4. Function With Return Value

Explanation:
The `return` keyword sends a value back from the function.

Example:

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

result = add(5, 7)
print(result)
```

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5. Function With Default Parameters

Explanation:
If no value is passed, Python uses the default value.

Example:

```
def hello(name="Student"):
    print("Hello", name)

hello()            # uses default
hello("Murphy")    # custom value
```

Practice Questions

Q1. Create a function `say_hello()` that prints: "Hello, World!"

Q2. Create a function `square(num)` that returns the square of a number.

Q3. Write a function `full_name(fname, lname)` that prints the full name.

Q4. Create a function `add_three(a, b, c)` that returns the sum of three numbers.

Q5. Write a function `area_circle(r)` that returns area of circle. (Use 3.14)