Modules in Python

1. Create a custom module with functions to add, subtract, multiply, and divide two numbers.

```python
# customModule.py > ⬡ divide
1   def add(a, b) :
2       return a + b
3
4   def subtract(a, b) :
5       return a - b
6
7   def multiply(a, b) :
8       return a * b
9
10  def divide(a, b) :
11      return a / b
```

2. Use the `math` module to calculate square root, factorial, and power of a number.

```python
# 3.2.py > ...
1   import math
2
3   number = int(input("Enter a number: "))
4   print(math.sqrt(number))
5   print(math.factorial(number))
6   print(math.pow(number, 5))
```

3. Write a program that uses `random` to generate a password of given length.

```python
# 3.3.py > ...
1   import random
2
3   length = int(input("Enter the required length of the password: "))
4   print(f"Your password is ", end = "")
5   for x in range(0, length) :
6       print(random.randint(0, 9), end = "")
```

4. Create a program using the `datetime` module to display the current date and time.

```python
# 3.4.py
1    from datetime import datetime
2
3    print("Current date and time is: ", end = "")
4    print(datetime.now())
```

5. Import a custom module and use its functions in another script.

```python
# customModule.py > divide
1    def add(a, b) :
2        return a + b
3
4    def subtract(a, b) :
5        return a - b
6
7    def multiply(a, b) :
8        return a * b
9
10   def divide(a, b) :
11       return a / b
```

```python
# 3.5.py
1    import customModule as custom
2
3    print(custom.add(2,7))
4    print(custom.subtract(12,5))
5    print(custom.multiply(3,9))
6    print(custom.divide(22,12))
```

6. Build a command-line utility using `argparse` to perform arithmetic operations.

7. Create and use a package with multiple modules in it.

```python
# mypackage > module1.py > subtract
1    def add(a, b) :
2        return a + b
3
4    def subtract(a, b) :
5        return a - b
```

```python
# mypackage > module2.py > multiply
1    def multiply(a, b) :
2        return a * b
```

```python
# mypackage > module3.py > divide
1    def divide(a, b) :
2        return a / b
```

```python
# 3.7.py
1    from mypackage import module1, module2, module3
2
3    print(module1.add(2,7))
4    print(module1.subtract(12,5))
5    print(module2.multiply(3,9))
6    print(module3.divide(22,12))
```

8. Develop a program that uses `os` and `sys` modules to list files and command-line args.

9. Use `importlib` to dynamically import a module and invoke a function.

10. Implement a Python script that uses `glob` to search for all `.txt` files in a directory.