

TDD practice assignment Class Task

Write a function called `is_prime` that accepts a number and returns `True` if it is a prime number, and `False` otherwise.

```
def is_prime(num):  
    if num <= 1:  
        return False  
  
    for i in range(2, num):  
        if num % i == 0:  
            return False  
  
    return True
```

Here are the steps you can follow to complete this assignment using TDD:

Step 1: Write a failing test case

```
def test_is_prime():  
    assert is_prime(5) == True
```

Step 2: Write the minimal code required to pass the test

```
def is_prime(num):  
    if num <= 1:  
        return False  
  
    for i in range(2, num):  
        if num % i == 0:  
            return False  
  
    return True
```

Step 3: Run the test and refactor the code

```
import math
```

```
def is_prime(num):  
    if num <= 1:  
        return False  
  
    for i in range(2, int(math.sqrt(num))+1):  
        if num % i == 0:  
            return False  
  
    return True
```

Step 4: Write additional test cases

```
def test_is_prime():  
    assert is_prime(5) == True  
    assert is_prime(7) == True  
    assert is_prime(11) == True  
    assert is_prime(4) == False  
    assert is_prime(20) == False  
    assert is_prime(1) == False  
    assert is_prime(-7) == False
```