

Name: _____ CM: _____ Section: _____ Grade: _____ of 10

1. Here is a correct implementation of a function that returns the sum of the cubes of the integers from m to n , inclusive:

```
def sum_cubes(m, n):
    """ Returns the sum of the cubes of the integers from m to n, inclusive. """
    total = 0
    for k in range(m, n + 1):
        total = total + (k ** 3)
    return total
```

Write an alternative implementation that uses a WHILE loop instead of a FOR loop.

```
def sum_cubes(m, n):
```

2. Which of the above two implementations is more easily/quickly understood (hence better)? (circle your choice)

The implementation using a FOR loop

The implementation using a WHILE loop

Why?

3. Consider the following problem:

Implement a function that returns the sum of the first N integers after (and including) M . For example, if M is **10** and N is **6**, this function would return **10 + 11 + 12 + 13 + 14 + 15**, which is 75.

For the above problem, which is a better choice? (circle your choice)

An implementation using a FOR loop

An implementation using a WHILE loop

4. Consider the following problem:

Implement a function that returns the sum of the first N integers after (and including) M **that are prime**. For example, if M is **10** and N is **6**, this function would return **11 + 13 + 17 + 19 + 23 + 29**, which is 112.

This problem CANNOT be solved by using a FOR loop. Explain why not.

5. Write a statement that prompts for and inputs an integer from the Console. (See *m1r* for how to do this problem. **Do this question AS you watch the video that shows answers to this quiz.**)