

Name: _____ Date: _____ Period: _____

Python Loops Practice Worksheet

Instructions: Answer each question clearly. For free-response questions, write a complete Python code snippet. For short-answer questions, provide a concise response. For multiple-choice questions, circle or write the letter of the correct answer. Show your work where applicable.

1. Write a `for` loop that prints the numbers from 1 to 10, each on a new line.

2. What is the output of the following code?

```
total = 0
for i in range(5):
    total += i
print(total)
```

3. Write a `while` loop that repeatedly asks the user to enter a number. The loop should stop when the user enters the number 0. For each number entered (except 0), print its square.

4. How many times will the following loop execute?

```
count = 0
while count < 10:
    print("Hello")
    count += 2
```

5. Use a `for` loop to calculate and print the sum of all even numbers between 1 and 20 (inclusive).

6. What is the output of this code?

```
for i in range(3, 0, -1):  
    print(i)
```

7. Write a loop that prints the multiplication table for the number 7 (from 1 to 10). Each line should show the multiplication and result, e.g., "7 x 1 = 7".

8. Which of the following loops will run infinitely? (Circle all that apply)

- (a) `while True: print("Loop")`
- (b) `x = 5; while x > 0: print(x); x -= 1`
- (c) `for i in range(10): print(i)`
- (d) `while 1: print("Infinite")`

9. Write a `for` loop that iterates over a list `names = ["Alice", "Bob", "Charlie"]` and prints each name in uppercase.

10. The following code is supposed to print the numbers 1 through 5, but it has a bug. Identify the bug and write the corrected code.

```
num = 1
while num <= 5:
    print(num)
```

Answer Key

- ```
1. for i in range(1, 11):
 print(i)
```
- The output is 10. The loop sums  $0 + 1 + 2 + 3 + 4 = 10$ .
- ```
3. num = int(input("Enter a number: "))  
    while num != 0:  
        print(num ** 2)  
        num = int(input("Enter a number: "))
```
- The loop executes 5 times (count = 0, 2, 4, 6, 8).
- ```
5. total = 0
 for num in range(2, 21, 2):
 total += num
 print(total)
 The sum is 110.
```
- The output is:  
  
3  
2  
1
- ```
7. for i in range(1, 11):  
    print(f"7 x {i} = {7 * i}")
```
- Options (a) and (d) will run infinitely.
- ```
9. names = ["Alice", "Bob", "Charlie"]
 for name in names:
 print(name.upper())
```
- The bug is that `num` is never incremented, so the loop runs infinitely. Corrected code:  
  

```
num = 1
while num <= 5:
 print(num)
 num += 1
```