

Quiz 2

The Art of Computer Programming

28 September 2026

Full name:

You have 10 minutes to answer this quiz, directly on this sheet of paper. No electronic devices or material of any kind is allowed. Do not forget to add your name above. Every question amounts to 2 points; the quiz is graded out of 10 points.

Questions

Q1. Circle the (only) correct answer. Regarding code blocks (the body of a test, of a loop, or of a function):

- a. In both Python and C, code blocks are delimited by curly braces { }; indentation is only a matter of style.
- b. In C, code blocks are delimited by curly braces { } and indentation is only a matter of style; in Python, code blocks are defined by indentation.
- c. In Python, code blocks are delimited by curly braces { } and indentation is only a matter of style; in C, code blocks are defined by indentation.
- d. In both Python and C, code blocks are defined by indentation.

Q2. Circle the (only) correct answer. In C, the difference between the loop `while (c) { ... }` and the loop `do { ... } while (c);` is that:

- a. The body of a `do ... while` loop is always executed at least once; the body of a `while` loop may never be executed.
- b. The body of a `while` loop is always executed at least once; the body of a `do ... while` loop may never be executed.
- c. A `while` loop stops when its condition `c` becomes false; a `do ... while` loop stops when its condition `c` becomes true.
- d. There is no difference: they are two ways of writing the same loop.

Q3.

```
i = 1
while i < 100:
    i *= 3
print(i)
```

What does this Python code fragment print?

Q4.

```
void triple(int x) {
    x = 3 * x;
}
```

```
int main(void) {
    int a = 2;
    triple(a);
    printf("%d\n", a);
    return 0;
}
```

Circle the (only) correct answer. This C program prints:

- a. 2
- b. 6
- c. 0
- d. Nothing: the program does not compile, because `triple` does not return a value.

Q5.

```
def f(n):
    if n == 0:
        return 0
    return n + f(n - 1)
```

What is the value of `f(4)` in Python?