3. Algorithms and Programming

Starter Quiz ·

AP Computer Science Principles Name: _____ Score: _____

1. A variable is best described as:

   ☐ a kind of error

   ☐ the program's output

   ☐ a permanent number that never changes

   ☐ a named box that stores one value at a time

2. Data abstraction helps a programmer by:

   ☐ hiding detail so complexity is easier to manage

   ☐ adding more variables

   ☐ making programs run on more computers

   ☐ removing all the data

3. A string is:

   ☐ a true/false value

   ☐ a single number

   ☐ an ordered sequence of characters

   ☐ a kind of loop

4. A conditional statement runs a block of code:

   ☐ always, every time

   ☐ in a random order

   ☐ only when its condition is true

   ☐ never

5. Repeating a block of code with a loop is called _____.

   _____

6. A list stores:

   ☐ an ordered collection of elements under one name

   ☐ one number only

   ☐ a program's output

   ☐ a single true/false value

7. To run a procedure's instructions from elsewhere, you _____ it by name.

   _____

8. Writing every function from scratch is safer than using a well-tested library.

   ☐ True ☐ False

9. Which are benefits of a simulation over a real trial? (Select all that apply)

   ☐ it is always perfectly accurate

   ☐ speed and scale

   ☐ lower cost

   ☐ reduced risk

   Tick every correct option.

10. Undecidable and merely inefficient (slow) mean the same thing.

    ☐ True ☐ False

AP Computer Science Principles

1. **a named box that stores one value at a time**

   The name is the label; the box holds the current value.

2. **hiding detail so complexity is easier to manage**

   Grouping data under one name hides needless detail.

3. **an ordered sequence of characters**

   Order matters, so ”abc” ≠ ”cba”.

4. **only when its condition is true**

   The condition decides whether the block runs.

5. **iteration**

   Iteration lets a short program do a lot of work.

6. **an ordered collection of elements under one name**

   Many values, one name, in a fixed order.

7. **call**

   After the call finishes, the program continues where it left off.

8. **False**

   False. A well-chosen library’s code has already been tested by many users, so reusing it saves time and usually reduces bugs.

9. **speed and scale; lower cost; reduced risk**

   A model is never perfectly accurate – that is its limitation.

10. **False**

    Inefficient can be solved slowly; undecidable cannot be solved for every case at all.