

## AP Computer Science Principles

### Unit 5 Review

Name: Key

NOTE\*\*\* This Test will be over **all of Unit 5** (including concepts covered on the quiz). Please use your Unit 5 Part 1 Review to help study

#### New Vocab:

- Array - a data structure used to represent a list in JavaScript
- List - A generic term for a programming data structure that holds multiple items
- Key Event - in JavaScript an event triggered by pressing or releasing a key on the keyboard. (ex: "keyup"). Use event.key from the "event" parameter of the onEvent callback function - to figure out which key was pressed.
- For loop - a typical looping construct designed to make it easy to repeat a section of code, using a counter variable. The for loop combines the creation of a variable, a boolean condition, and an update to the variable in one statement.
- Return value - a value sent back by a function to the place in the code where the function was called from - typically asking for a value (ex: getText(id)) or the result of a calculation or computation.
- Canvas - a user interface element to use in HTML or JavaScript which acts as a digital canvas allowing programmatic drawing and manipulation of pixels, basic shapes, figures and images.

## Short Answer

1. Arrays and variables both store information. Give two examples of what would best be stored in variables and two examples that would be best stored in arrays

a. Variable: - sum of values: sum  
- the current score: ~~score~~ score

b. Array: - a list of names on a roster: roster  
- a list of scores throughout a season: scores

2. Assume there is a global variable called **numberList** that contains a list of integers. Write pseudo code for a function that takes in an integer as a parameter called **split** and returns a new array that contains all the numbers less than **split**.

```
PROCEDURE splitter (split)
{
  shorterList ← []
  FOR EACH item IN numberList
  {
    IF (item < split)
    {
      APPEND (shorterList, item)
    }
  }
  RETURN shorterList
}
```

3. What is the purpose of refactoring code? What steps might be needed in this process?

- Refactoring is the process of changing the way we wrote old code in order to keep programs consistent and readable while incorporating new functionality.

- This may include changing variables, updating functions, etc.

↑  
or to remove redundancy

4. Which search method is more efficient, linear search or binary search? What has to be true about a list before a binary search can be done?

- binary search is more efficient, but has to be done on a list that is already sorted

5. Why are return values sometimes necessary/helpful? Why don't we just make all variables global?

- return values are a useful way to move useful information (variables) generated inside a function to the rest of your program

- A global variable is accessible by all functions. As a result, it can be difficult to determine every location it is modified. This can lead to more work with reasoning + debugging. Using a return value allows you to focus on local variables (smaller scope)

6. Give an example of a function that would be best written with a return value. What would the return value be?

A function that takes an integer as a parameter and returns a boolean of true if the integer is an even number. The boolean value would be true/false.