

# Answer Keys & Grading Notes

Objective-aligned exemplars, full-credit models, and the mistakes to watch for. **Do not distribute to students.**

**True-up step:** the objective sections below are built from the AP learning objectives. Paste your real Code.org prompts into chat and I'll fill exact question-by-question keys. The *AI-Proof Worked Answers* section matches the handwritten assignment exactly.

## A · String methods (0-indexed!)

Call on <code>s = "COMPUTER"</code>	Result
<code>s.length()</code>	8
<code>s.substring(0,3)</code>	"COM" (index 3 excluded)
<code>s.substring(3)</code>	"PUTER"
<code>s.indexOf("P")</code>	3
<code>s.indexOf("Z")</code>	-1 (not found)
<code>s.charAt(0)</code>	'C'

**Common mistakes:** `substring(a,b)` includes `b` (it doesn't — `b` is exclusive); 1-indexing strings; forgetting `indexOf` returns `-1` when absent.

## B · References & equality

**Full-credit exemplar:** `==` compares references (same object?); `.equals()` compares contents. For Strings, always use `.equals()`. `null` means the variable points to no object; calling a method on `null` throws `NullPointerException`.

**Common mistakes:** Using `==` to compare String contents; calling a method on a null reference; thinking two equal-looking Strings are always `==`.

## AI-Proof Worked Answers — Using Objects — Handwritten String FRQ

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Grade the handwritten sheet against these. Item numbers match the assignment.

Item	Correct answer
1a) <code>s.length()</code>	8
1b) <code>s.substring(0, 3)</code>	"COM"
1c) <code>s.substring(3)</code>	"PUTER"
1d) <code>s.indexOf("T")</code>	5
1e) <code>s.charAt(2)</code>	'M'
2) <code>firstNameLast</code>	<code>return name.charAt(0)+". "+name.substring(name.indexOf("")+1);</code> → "J. Smith"
3) <code>==</code> vs <code>.equals()</code>	<code>==</code> compares references; <code>.equals()</code> compares the actual characters