AP CSA · UNIT 7 ARRAYLIST · TEACHER ANSWER KEY

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 · ArrayList methods

Call	Effect
`list.add(x)`	appends x at the end
`list.add(i, x)`	inserts x at index i, shifting the rest right
`list.get(i)`	returns element at i
`list.set(i, x)`	replaces element at i, returns the old value
`list.remove(i)`	removes element at i, shifts left, returns removed
`list.size()`	number of elements

Common mistakes: Using [] or .length on an ArrayList (it's .size() and .get()); forgetting remove shifts indices; off-by-one after insert.

B · Remove-during-iteration pitfall

Full-credit exemplar: Removing while looping forward with i++ skips the element after each removal (indices shift left). Fix: don't increment i after a remove, or iterate backward from size()-1 to 0.

Common mistakes: for-each removal (ConcurrentModificationException); forward loop that skips elements; using size() but indexing like an array.

AI-Proof Worked Answers — ArrayList — Handwritten FRQ

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

Item	Correct answer
`after add 3, 7, 5`	[3, 7, 5]
`after add(1, 9)`	[3, 9, 7, 5]
`after remove(0)`	[9, 7, 5]
`after set(1, 2)`	[9, 2, 5]
`2) removeSmall`	for(int i=list.size()-1;i>=0;i--) if(list.get(i)<cutoff) list.remove(i);
`3) for-each removal`	throws ConcurrentModificationException — use an indexed loop or an Iterator