



AP[®] Computer Science A 2001 Scoring Commentary

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Question 1

Sample 1

Excellent solution (Score 9)

This student had a completely correct solution.

Sample 2

Good solution (Score 6)

This student got the full point for traversing the array in part (a) but only $\frac{1}{2}$ for the attempt to reset each pump. In part (b) this student got 1 point for declaring/initializing and returning the total, 1 point for attempting to handle the “full-serve” case, 1 point for traversing the array of pumps, and $\frac{1}{2}$ point for attempting to accumulate the total (notice that `myBasePrice` gets changed, so the pricing is correct only for the pump 0). This student lost a point for using `p` instead of `myPumps` throughout. In part (c) this student got $\frac{1}{2}$ for an attempt to write out `TotalSales` and the 1 point for the correct call to `ResetAll`.

Sample 3

Poor solution (Score 3)

In part (a) this student received $\frac{1}{2}$ point for attempting to traverse the array and $\frac{1}{2}$ point for attempting to call `ResetGallonsSold` for each pump. The local variable `p` made both incorrect. In part (b) this student received $\frac{1}{2}$ point for returning the result and $\frac{1}{2}$ point for attempting to handle the “full-serve” case. In part (c) the student received $\frac{1}{2}$ point each for attempting to call `TotalSales()` and attempting to call `ResetAll()`. Although the logic is wrong, the two function calls were enough to get the two $\frac{1}{2}$ points.

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Question 2

Sample 1

Excellent solution (Score 9)

Note that in part (b) the student searched for the insertion point, then shifted items, then inserted. This was a common way for students to do this problem.

Sample 2

Good solution (Score 6)

This student received 1 point for an attempt in part (a). In part (b) the four $\frac{1}{2}$ points for attempts were given (attempts to resize, to find the location, to shift, and to insert) and 1 point for incrementing `myCount` was given. Part (c) was correct.

Sample 3

Poor solution (Score 3)

This student received 1 point in part (a) for the attempt. The function does not return a value for all cases. In part (b) this student lost $\frac{1}{2}$ because the size was not doubled by the `resize`, $\frac{1}{2}$ point because the code for locating the insertion point was not correct, $\frac{1}{2}$ because the shift was incorrect, and $\frac{1}{2}$ because the insertion was incorrect because it was done before shifting. This student also lost a point for not incrementing `myCount`. In part (c) the student received no points because the array `second` was never used.

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Question 3

Sample 1

Excellent solution (Score 9)

This student did a completely correct solution except for not calling `env.Update` in part (c).

Sample 2

Good solution (Score 6)

This student received 1 point in part (a) for decrementing `myFishCount`. In part (b) this student received 1 point for checking all four directions and 1 point for correctly calling `AddFish`, but failed to check if each position was empty. In part (c) this student lost ½ point because the check for a fish dying was incorrect — `r` was not declared — and ½ point for failing to call `env.Update`; otherwise part (c) was correct.

Sample 3

Poor solution (Score 3)

This student received 1 point in part (a) for decrementing `myFishCount`. In part (b) this student received 1 point for the correct call to `EmptyNeighbors` but lost ½ point usage for a confused identifier (`pos` instead of `myPos`). In part (c) this student received ½ point for an attempt to check if this fish died, ½ point for not allowing a dead fish to breed or move (`else`), and ½ point for an attempt to breed (incorrect syntax).

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Question 4

Sample 1

Excellent solution: (Score 9)

This solution is completely correct.

Sample 2

Good solution (Score 6)

Part (a) is correct. In part (b) the student lost the ½ point for correct for both the `IsInBounds` check and the use of `myMat` because the "w." reference was incorrect. In part (c) the student attempted two nested loops but lost 1 point because they are not correct. The student also lost 1 point because the parameters for the call to `ColorSquare` are incorrect.

Sample 3

Poor solution (Score 3)

The student got 1 point for an attempt in part (a), but the upper bounds in the check are off by one. In part (b) the student got ½ for an attempt at two nested loops, but the bounds are not correct. There was no check for `IsInBounds` inside the loop, which lost 1 point. The assignment of `val` to each element was correct. In part (c) the student used nested loops to attempt to copy the rectangle. However, no nested loops were used for doing the enlargement, so the student received no points on this part.