**Question 4: Latin Squares**

| Total Scored out of 9 |  |
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**Part (a) getColumn 4 points**

Intent: Create a 1-D array that contains the values from one column of a 2-D array

+1 Constructs a new int array of size arr2D.length

+1 Accesses all items in one column of arr2D (no bounds errors)

+1 Assigns one element from arr2D to the corresponding element in the new array

+1 On exit: The new array has all the elements from the specified column in arr2D in the correct order

**Part (b) isLatin 5 points**

Intent: Check conditions to determine if a square 2-D array is a Latin square

+1 Calls containsDuplicates referencing a row or column of square

+1 Calls hasAllValues referencing two different rows, two different columns, or one row and one column

+1 Applies hasAllValues to all rows or all columns (no bounds errors)

+1 Calls getColumn to obtain a valid column from square

+1 Returns true if all three Latin square conditions are satisfied, false otherwise

Question-Specific Penalties

-1(r) incorrect construction of a copy of a row-

-1(s) syntactically incorrect method call to any of getColumn(),containsDuplicates(), or hasAllValues()