**2015 Question 1: Diverse Array (9 points)**

| Total Scored out of 9 |  |
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**Part A: arraySum (2 points)**

*Intent: Compute and return sum of elements in 1D array* arr*, passed as parameter*

+1 Accesses all elements of arr, (no bounds errors on arr)

+1 Initializes, computes, and returns sum of elements

**Part B: rowSums (4 points)**

*Intent: Compute and return 1D array containing sums of each row in the 2D array* arr2D *passed as parameter*

+1 Constructs correctly-sized 1D array of ints

+1 Accesses all words in arr2D (no bounds errors on arr2D)

+1 Computes sum of row of arr2D using arraySum and assigns to element in 1D array

+1 Returns 1D array where kth element is computed sum of corresponding row in 2D array for all rows

**Part C: isDiverse (3 points)**

*Intent: Determine whether* arr2D*, passed as parameter, is diverse*

+1 Computes and uses array of row sums from arr2D using rowSums

+1 Compare all and only pairs of row sums for equality (No bounds errors on row sums array;

point not awarded if no adjustment when compares any row sum with itself)

+1 Returns true if all compared row sums are different and false otherwise

(point not awarded for immediate return)

**Question-Specific Penalties**

-1 (g) Uses getLength/getSize for array size

-1 (y) Destruction of persistent data (arr or arr2D)