**2012 Question 3: Horse Barn (9 points)**

| Total Scored out of 9 |  |
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**Part A: findHorseSpace (4 points)**

Intent: Return index of space containing horse with specified name

+1 Accesses all entries in spaces (no bounds errors)

+1 Checks for null reference in array and avoids dereferencing it (in context of loop)

+1 Checks for name equality between array element and parameter

(must use String equality check)

+1 Returns correct index, if present; -1 point if not

**Part B: consolidate (5 points)**

Intent: Repopulate spaces such that the order of all non-null entries is preserved and all null entries are found contiguously at the largest indices

+1 Accesses all entries in spaces (no bounds errors)

+1 Identifies and provides different treatment of null and non-null elements in array

+1 Assigns element in array to a smaller index

(must have identified source as non-null or destination as null)

+1 On exit: The number, integrity, and order of all identified non-null elements in spaces is preserved, and the number of null elements is preserved

+1 On exit: All non-null elements in spaces are in contiguous locations, beginning at index 0 (no destruction of data)

**Question-Specific Penalties**

-1 (z) Attempts to return a value from consolidate

-2 (v) Consistently uses incorrect array name instead of spaces