Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Pledge: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Consider an array containing the following 40 integers:

5 2 4 4 0 1 6 7 3 1 1 0 5 1 5 4 4 5 7 0 6 1 0 7 5 2 7 6 5 3 7 0 5 5 7 1 1 2 6 5

How many counters does CountingSort need to sort this array: \_\_\_\_\_\_\_\_

Give the value of each counter after the array of counters has been fully initialized:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Consider an array containing the following 32 bit integers (written as hexadecimal values to save space):

4EC1EEA9

520B6E78

1E90D74E

52DB6E42

5F05EF13

74284442

794E8117

55526E42

Imagine you are using a version of RadixSort that sorts on one byte at a time (so two hexadecimal digits) using a stable version of CountingSort. Write the content of the array after each of the four runs of CountingSort: