**Test Data Plan**

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| **Explanation** | **Valid Inputs Values** |  |
| **Kth smallest in s1** | Input: array size (int)  Input: array values (matching the amount of the size value)  Input: kth element | 7  7 3 10 9 2 8 1  3 |
|  | Expected output: kth smallest in the array | 3 |
| **Kth smallest in s2** | Input: array size (int)  Input: array values (matching the amount of the size value)  Input: kth element | 7  7 3 10 9 2 8 1  6 |
|  | Expected output: kth smallest in the array | 9 |
| **Kth smallest is the pivot** | Input: array size (int)  Input: array values (matching the amount of the size value)  Input: kth element | 5  2 4 1 5 9  3 |
|  | Expected output: kth smallest in the array | 4 |
| **Kth smallest in an ordered array** | Input: array size (int)  Input: array values (matching the amount of the size value)  Input: kth element | 5  1 3 4 5  3 |
|  | Expected output: kth smallest in the array | 3 |
| **Kth smallest in an reverse ordered array** | Input: array size (int)  Input: array values (matching the amount of the size value)  Input: kth element | 5  5 4 3 2 1  3 |
|  | Expected output: kth smallest in the array | 3 |
|  |  |  |
|  | **boundary input values** |  |
| **Kth smallest is the first smallest (special case)** | Input: array size (int)  Input: array values (matching the amount of the size value)  Input: kth element | 7  1 3 5 2 19 3 4  1 |
|  | Expected output: kth smallest in the array | 1 |
| **Kth smallest is the first biggest** | Input: array size (int)  Input: array values (matching the amount of the size value)  Input: kth element | 5  1 3 5 4 19  5 |
|  | Expected output: kth smallest in the array | 19 |
| **Kth smallest in one element array** | Input: array size (int)  Input: array values (matching the amount of the size value)  Input: kth element | 1  100  1 |
|  | Expected output: kth smallest in the array | 100 |
|  |  |  |
|  | **Invalid Inputs Values** |  |
| **Kth smallest is greater than array size** | Input: array size (int)  Input: array values (matching the amount of the size value)  Input: kth element | 5  7 3 10 9 2  7 |
|  | Output: kth smallest in the array | ERROR MSG |
| **Kth smallest is smaller than 0** | Input: array size (int)  Input: array values (matching the amount of the size value)  Input: kth element | 6  1 4 9 2 10 3  0 |
|  | Output: kth smallest in the array | ERROR MSG |