Cooper Bates
cbb2153

**5.1**

a.)

n = 1
k = 2
r = 1

b.)

n = 1
k = 2
r = 2

c.)

n = 1
k = 1
r = 2

d.)

n = 1
k = 6
r = 3

**5.11**

a.) 10-12, 11-13

| s | e | start1 | start2 | end1 | end2 |
|---|---|---|---|---|---|
| | | 10 | 11 | 12 | 13 |
| 11 | 12 | 10 | 11 | 12 | 13 |

The appointments overlap (end of program)

b.) 10-11, 12-13

| s | e | start1 | start2 | end1 | end2 |
|---|---|---|---|---|---|
| | | 10 | 12 | 11 | 13 |
| 12 | 11 | 10 | 12 | 11 | 13 |

The appointments don’t overlap (end of program)

**5.15**

Test cases for all possible inputs:

1. 10-11, 8-9 (start1 > start2) (end1 >= end2) (s >= e)
2. 3-4, 1-5 (start1 > start2) (end1 < end2) (s < e)
3. 2-5, 3-4 (start1 <= start2) (end1 > end2) (s < e)
4. 10-11, 12-13 (start1 <=start2) (end1 < end2) (s >= e)

Test case for boundary inputs:

5. 0-3, 23-24 (start1 <= start2) (end1 < end2) (s >= e)

Test case for invalid inputs:

6. [-1]-2, 23-23 (start1 <= start2) (end1 < end2) (s >= e)