

Problem 1 (30 points)

Test cases:

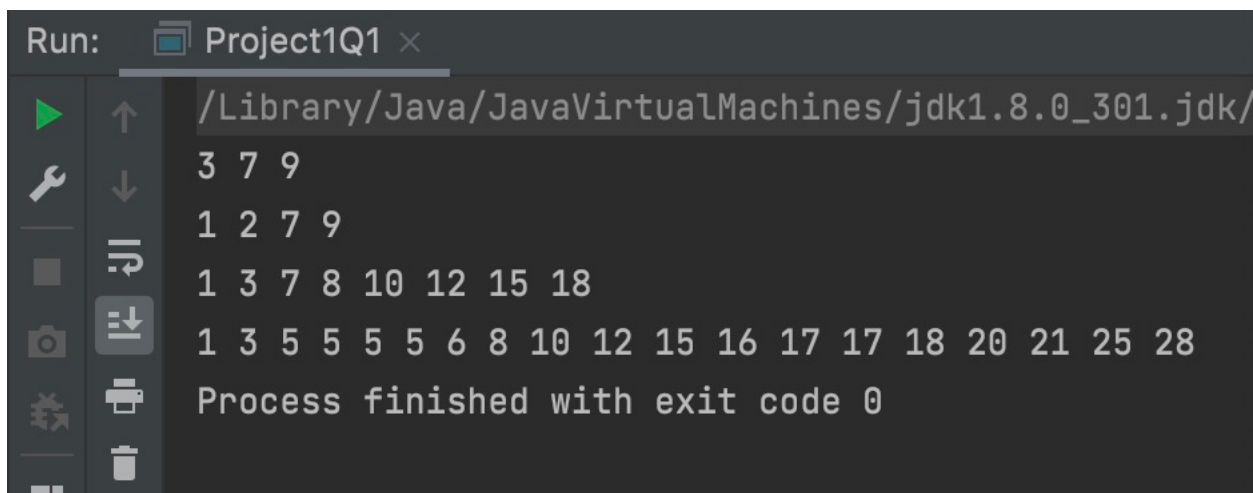
Test Case 1: {} and {3, 7, 9}

Test Case 2: {2, 7, 9} and {1}

Test Case 3: {1, 7, 10, 15} and {3, 8, 12, 18}

Test Case 4: {1, 3, 5, 5, 15, 18, 21} and {5, 5, 6, 8, 10, 12, 16, 17, 17, 20, 25, 28}

Result:



```
Run: Project1Q1 x
/Library/Java/JavaVirtualMachines/jdk1.8.0_301.jdk/
3 7 9
1 2 7 9
1 3 7 8 10 12 15 18
1 3 5 5 5 5 6 8 10 12 15 16 17 17 18 20 21 25 28
Process finished with exit code 0
```

Problem 2 (70 points)

Ala Carte Multiplication

Test cases

Test Case 1: 7000 * 7294

Test Case 2: 25 * 5038385

Test Case 3: -59724 * 783

Test Case 4: 8516 * -82147953548159344

Test Case 5: 45952456856498465985 * 98654651986546519856

Test Case 6: -45952456856498465985 * -98654651986546519856

Result:

```
Run: Project1Q21 x
/Library/Java/JavaVirtualMachines/jdk1.8.0_301.jdk/Contents/Home/bin/java ...
7000 * 7294 = 51058000
25 * 5038385 = 125959625
-59724 * 783 = -46763892
8516 * -82147953548159344 = -699571972416124973504
45952456856498465985 * 98654651986546519856 = 4533423639104649634397093450504343098160
-45952456856498465985 * -98654651986546519856 = 4533423639104649634397093450504343098160
Process finished with exit code 0
```

Rectangle Multiplication

```
Run: Project1Q22 x
/Library/Java/JavaVirtualMachines/jdk1.8.0_301.jdk/Contents/Home/bin/java ...
7000 * 7294 = 51058000
25 * 5038385 = 125959625
-59724 * 783 = -46763892
8516 * -82147953548159344 = -699571972416124973504
45952456856498465985 * 98654651986546519856 = 4533423639104649634397093450504343098160
-45952456856498465985 * -98654651986546519856 = 4533423639104649634397093450504343098160
Process finished with exit code 0
```