

Question 1. Short Answer Questions

(60 points)

Fill in the box with the answer.

- *Removed in publishable version* -

Question 2. Coding 1

(20 points)

Complete the overridden method `void addFirst(T item)`.

It is a method of the class `DelimitedARDeque`, a subclass of an iterable `ARDeque`.

It adds an item to the front of the object of `DelimitedARDeque`,

but it will throw an `IllegalArgumentException` if the item already occurs in it more than once.

Test case:

```
DelimitedARDeque<String> dd = new DelimitedARDeque<>();
```

```
dd.addFirst("a");
```

```
dd.addFirst("b");
```

```
try {
```

```
    dd.addFirst("a");
```

```
    dd.printDeque();
```

```
} catch (IllegalArgumentException e) {
```

```
    System.out.println("AddFirst failed");
```

```
}
```

→ AddFirst failed

Question 3. Coding 2

(20 points)

Complete the method `boolean equals(Object that)` of an iterable `ARDeque` that overrides the one in `Object`.

To be the same, they must be of the same size, and must share at most 1 different items at the same position.

Suppose `[]` is an `ARDeque<Integer>`. Then:

`[1, 2, 3].equals([1, 2, 5])` → `true`

`[1, 3, 2].equals([1, 2, 3])` → `false`

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