

Find last index of element.

a) The condition must be $i \geq 0$, not $i > 0$

b) $x = \text{null}$ and y can be anything.

Both the correct and the incorrect version of the program throws `NullPointerException`.

c) $x = []$ and y can be anything.

d) $x = [1]$ and $y = 2$

e)

correct program states:

1. $x = [2, 3, 5], y = 2$
2. $i = 2$
3. $i = 1$
4. $i = 0$ <----

incorrect program states:

1. $x = [2, 3, 5], y = 2$
2. $i = 2$
3. $i = 1$
4. $i = 1$ (no change in state, this is just for demonstration) <----

f)

```
for (int i=x.length; i>=0; i--) {
    if (x[i]==y)
        return i;
}
return -1;
```

Count positive elements.

a) The condition must be $x[i] > 0$, not $x[i] \geq 0$

b) $x = []$

c) $x = [1]$

d) Impossible. To generate error, we must increment the `count` variable for element zero. If we do so, we incorrectly compute the result, which causes failure.

e)

correct program states:

1. $x = [-4, 2, 0, 2]$
2. $\text{count} = 0$
3. $i = 0$
4. $i = 1, \text{count} = 1$
5. $i = 2, \text{count} = 1$ <----
6. $i = 3, \text{count} = 2$

incorrect program states:

1. $x = [-4, 2, 0, 2]$
2. $\text{count} = 0$
3. $i = 0$
4. $i = 1, \text{count} = 1$
5. $i = 2, \text{count} = 2$ <----

f)

```
int count=0;
for(int i=0; i<x.length; i++)
    if (x[i] > 0)
        count++;
return count;
```