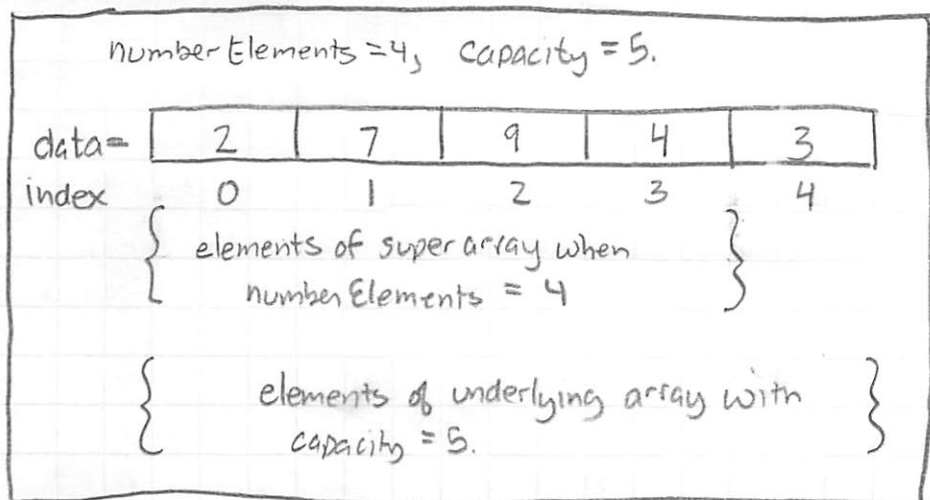


Sketch a diagram for superarray with number of elements = 4 and capacity = 5.  
 Illustrate what happens when `grow()` is invoked.

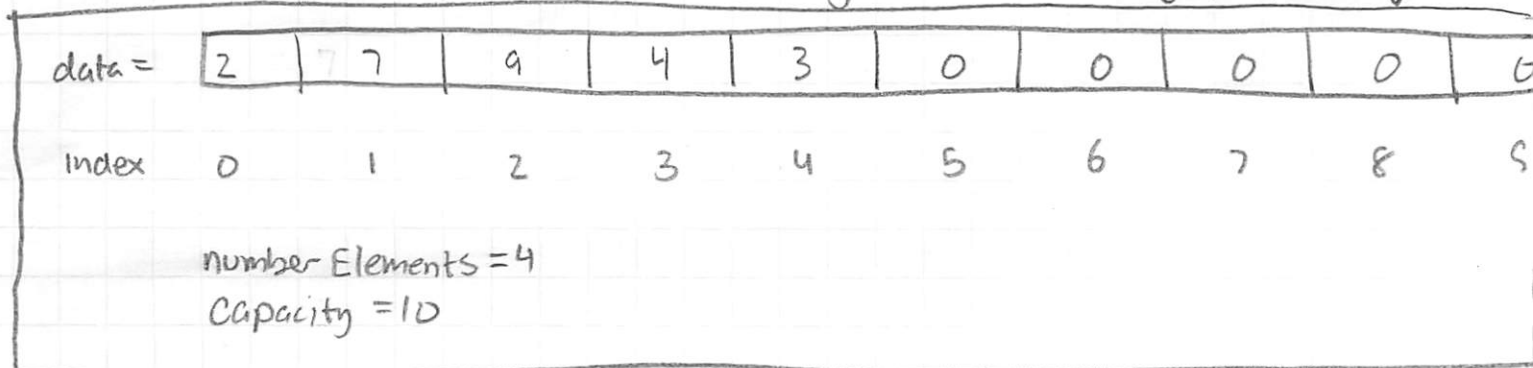
SuperArray sa



sa.grow() results in

- creating a new underlying array with capacity  $5 + 5 = 10$
- copying the value at each index of the original array to the same index of the new array
- pointing "this" to the new, larger array.

SuperArray ~~that~~ sa ↓



Super-Array sa ↘

int[] data

0	1	2	3	4
4	0	5	7	6

int numberElements = 5

sa.add(2, 9) results in:

does numberElements == data.length? Yes. So, sa.grow()

0	1	2	3	4	5	6	7	8	9
4	0	5	7	6	0	0	0	0	0

Curved arrows indicate shifting elements from index 3 to 9 one position to the right.

Intermediate entries:

4	0	5	5	7	6	0	0	0	0
---	---	---	---	---	---	---	---	---	---

Then

4	0	9	5	7	6	0	0	0	0
---	---	---	---	---	---	---	---	---	---

numberElements = 6.