(11 marks) A ternary min heap is a min heap where each node has at most 3 children. All properties are the same as a normal min heap. Its complete tree is filled from left to right at each level. It also has an array representation. An example is shown below:

The array representation is:

8

15

20

9

10

7

4

3

5

You are given the code for class Heap, a binary min heap (implemented using array). **Write a class TernaryHeap**:

* The class TernaryHeap has all the variables and methods from class Heap.
* Make modifications to all necessary places so that Ternary heap works.
* Test cases are in TestHeap.java. The score for each test is in the code’s comment.
* Hint: For position i
  + the position of its parent node is (i-1)/3
  + the position of its child nodes are 3\*i+1, 3\*i+2, 3\*i+3
* Submit ONLY **TernaryHeap.java**