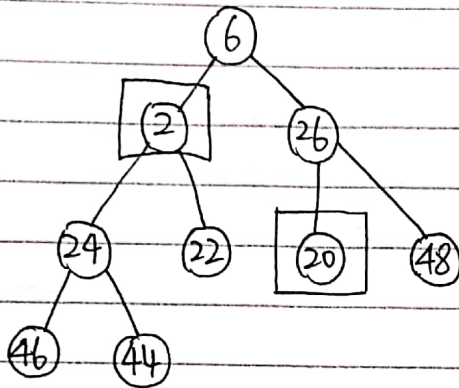# Part (a)

1) [6, 2, 26, 24, 22, 20, 48, 46, 44]
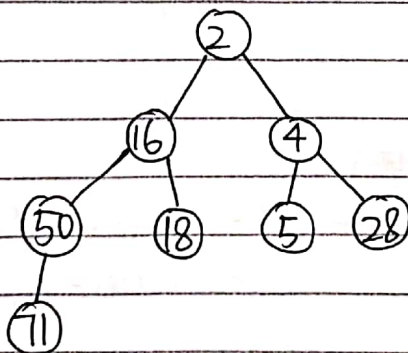
This array is not valid binary Min Heaps

The child with value 2 and the child with value 20 violate the heap property
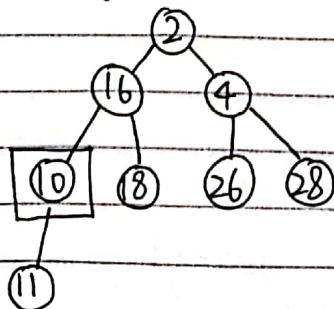
2) [2, 16, 4, 50, 18, 5, 28, 71]

This array is valid binary Min Heap
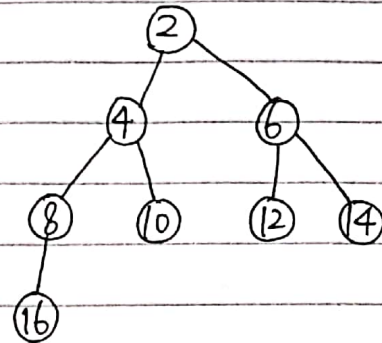

3) [2, 16, 4, 10, 18, 26, 28, 11]
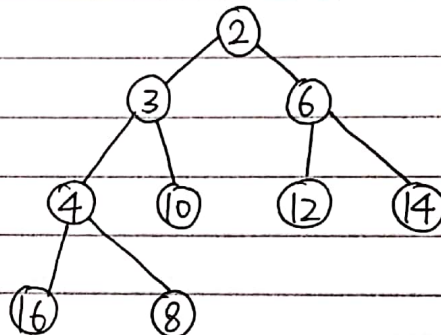
This array is not valid binary Min Heap

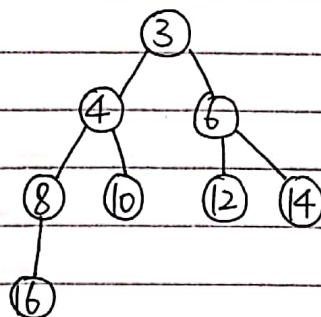The child with value 10 violate the heap property
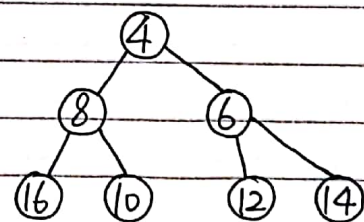
Part (b)

(1) Initial Configuration

```
              (2)
          (4)      (6)
       (8) (10)  (12) (14)
      (16)
```

(2) Insert 3

```
               (2)
           (3)      (6)
        (4) (10)  (12) (14)
      (16) (8)
```

(3) Pop

```
         (3)
      (4)    (6)
    (8) (10) (12) (14)
  (16)
```

(4) Pop

```
                 (4)
              (8)    (6)
           (16)(10) (12)(14)
```

(5) Insert 5

```
            (4)
         (5)    (6)
      (8) (10) (12) (14)
    (16)
```