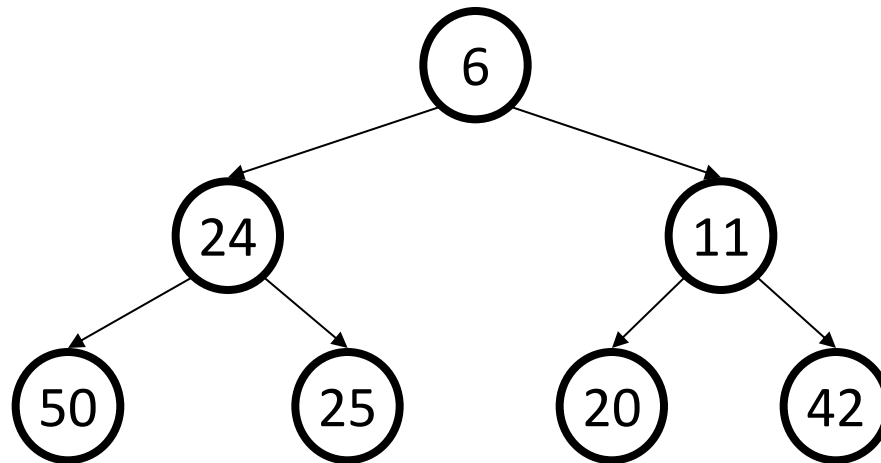


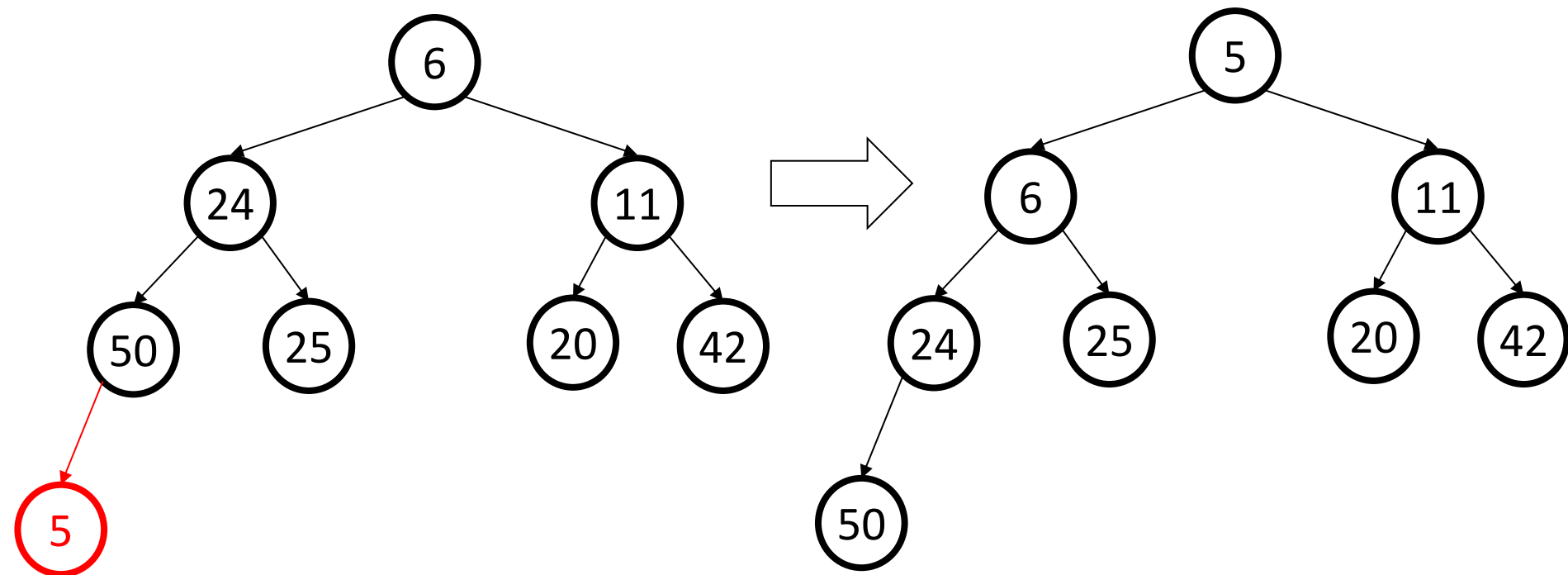
# Bubble-up

- Draw the tree state of a min-heap after adding the following elements into the tree below: 5, 4, 3, 21, 8



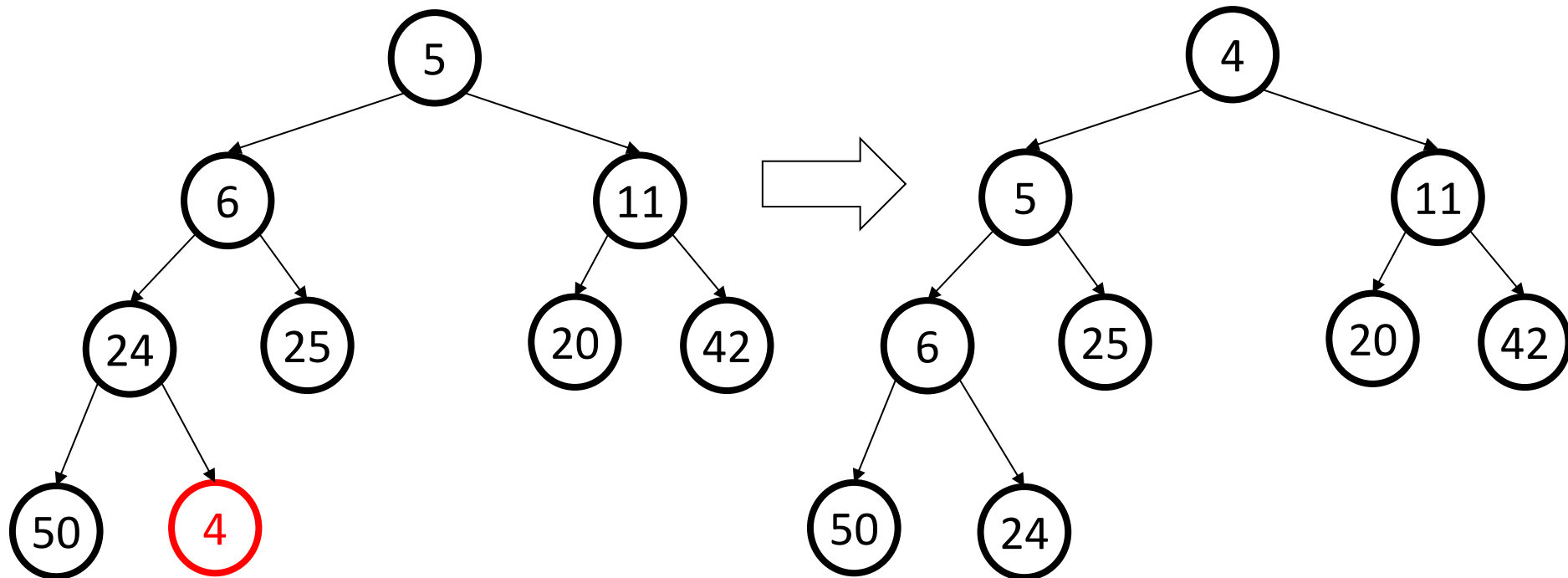
# Bubble-up

- Draw the tree state of a min-heap after adding the following elements into the tree below: 5, 4, 3, 21, 8



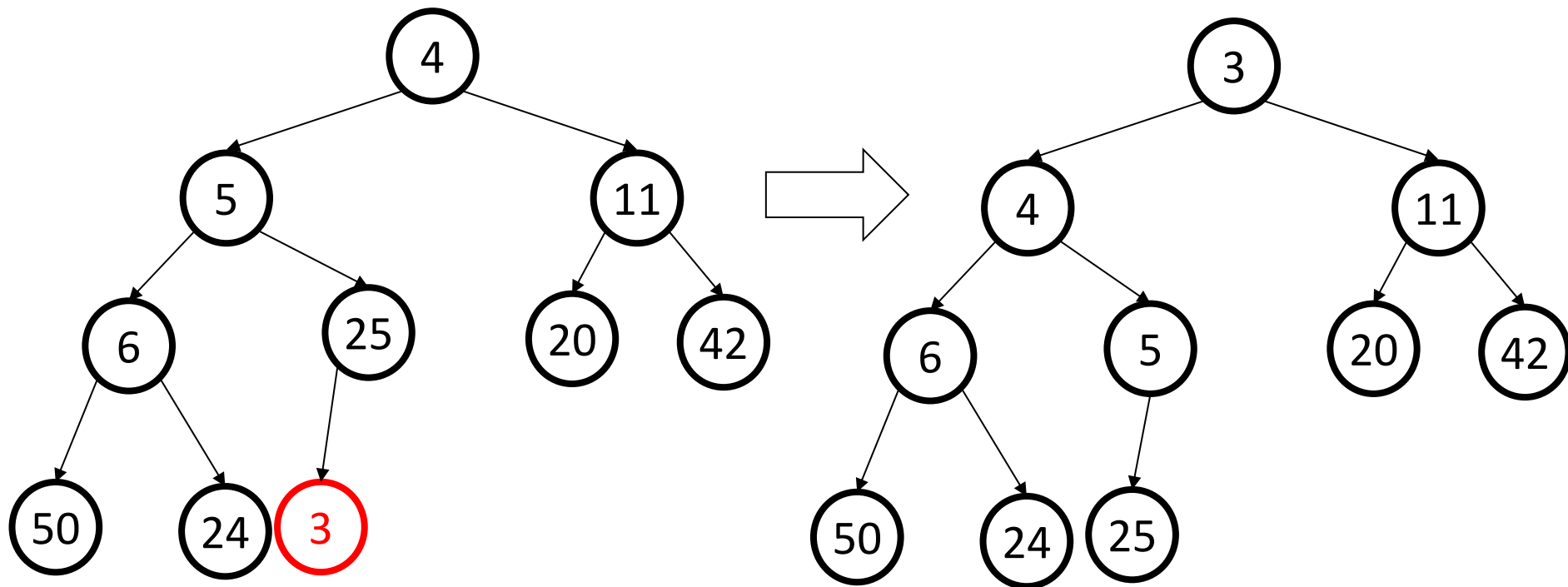
# Bubble-up

- Draw the tree state of a min-heap after adding the following elements into the tree below: 5, 4, 3, 21, 8



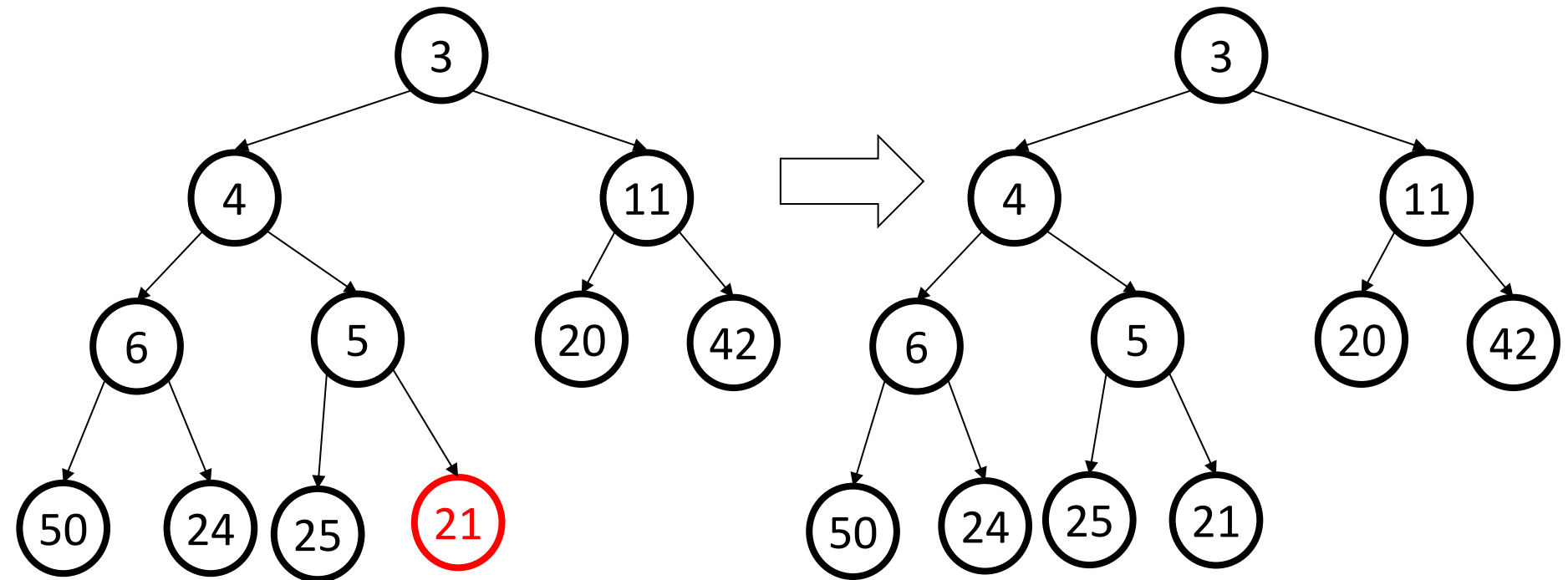
# Bubble-up

- Draw the tree state of a min-heap after adding the following elements into the tree below: 5, 4, 3, 21, 8



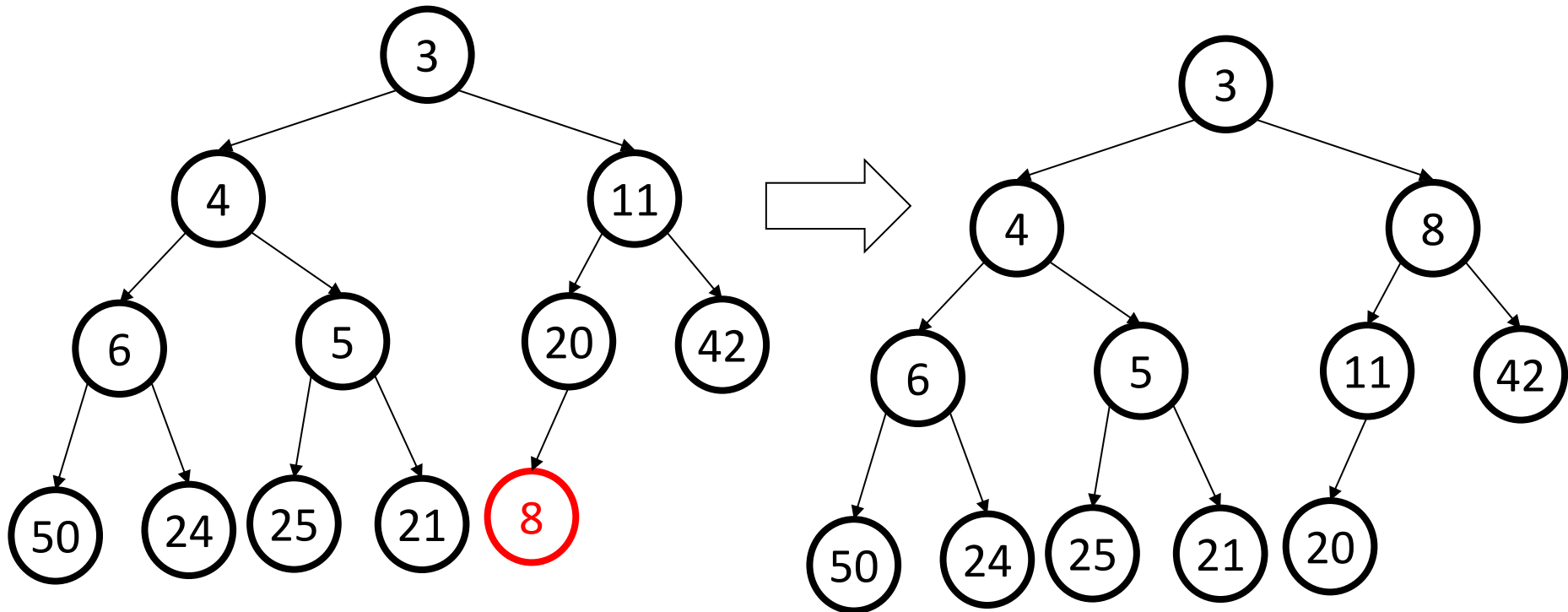
# Bubble-up

- Draw the tree state of a min-heap after adding the following elements into the tree below: 5, 4, 3, 21, 8



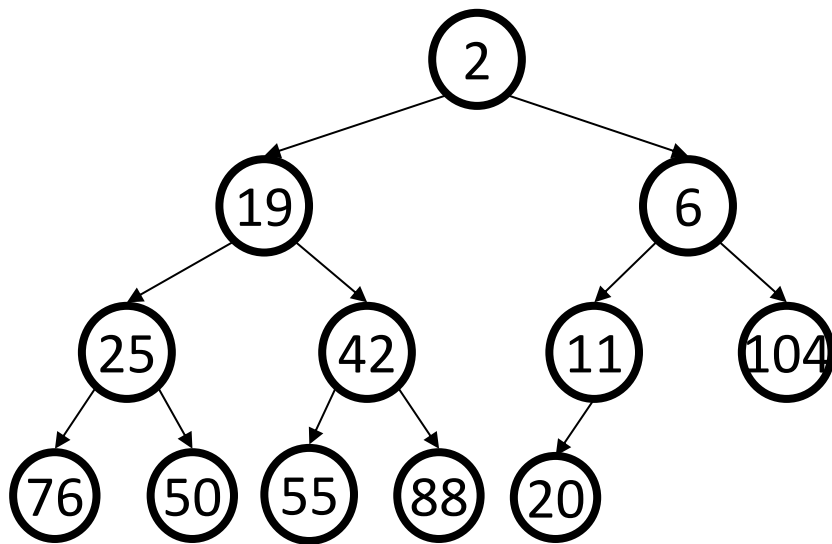
# Bubble-up

- Draw the tree state of a min-heap after adding the following elements into the tree below: 5, 4, 3, 21, 8



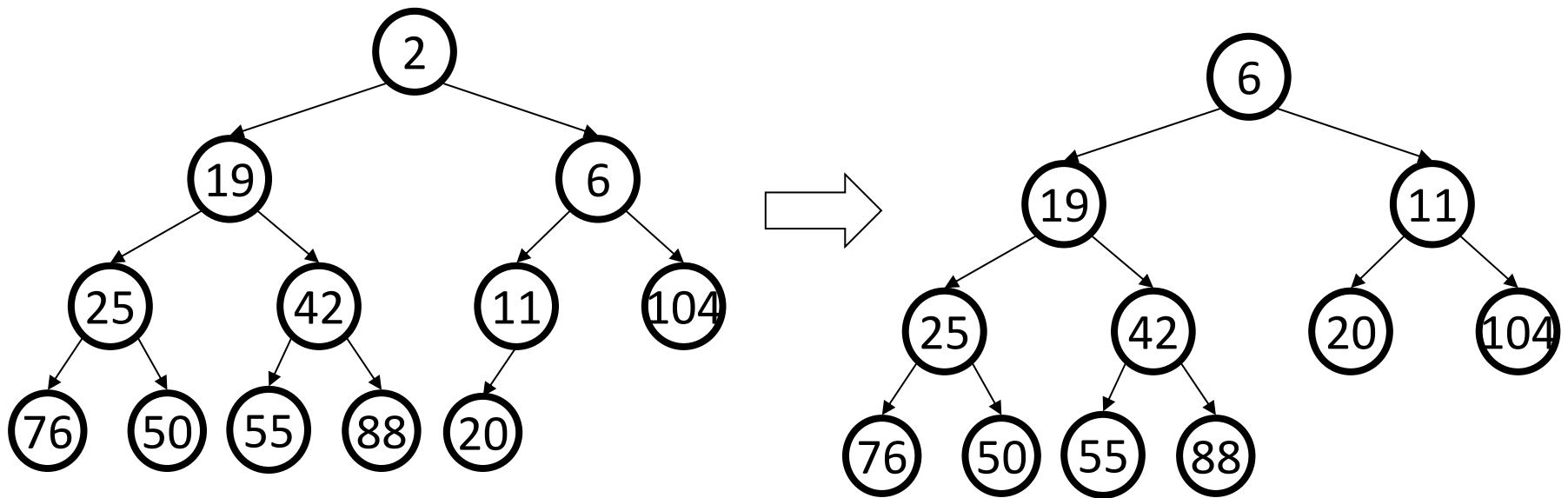
# Bubble-down

- Suppose we have the min-heap shown below.
- Show the state of the heap tree after remove has been called 4 times, and which elements are returned by the removal.



# Bubble-down

- Suppose we have the min-heap shown below.
- Show the state of the heap tree after remove has been called 4 times, and which elements are returned by the removal.

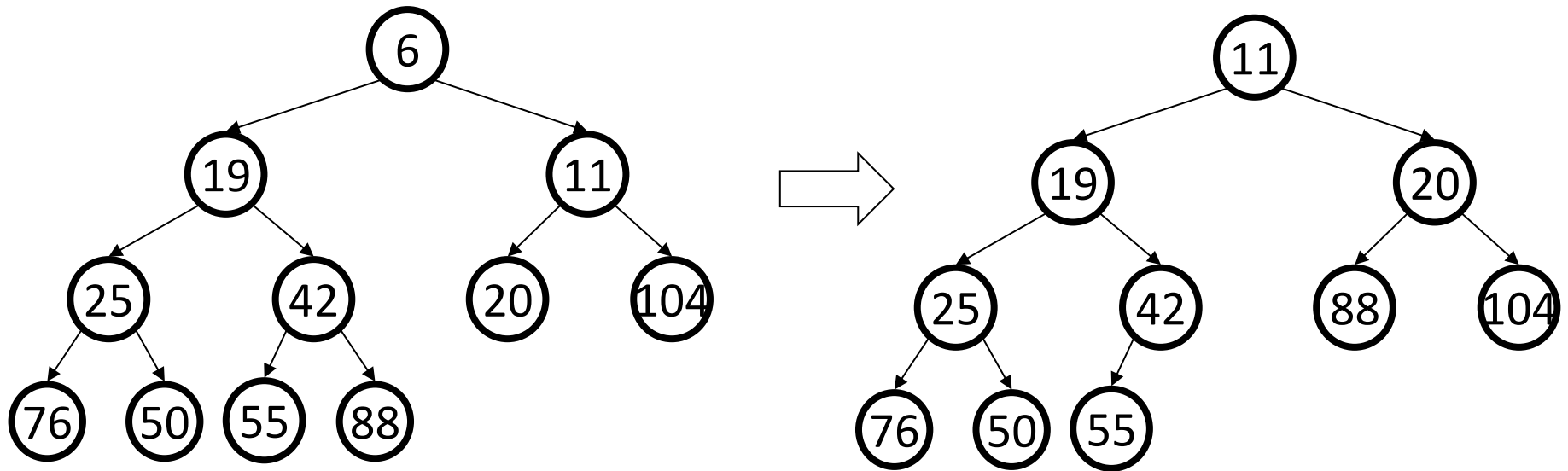


After the first remove call



# Bubble-down

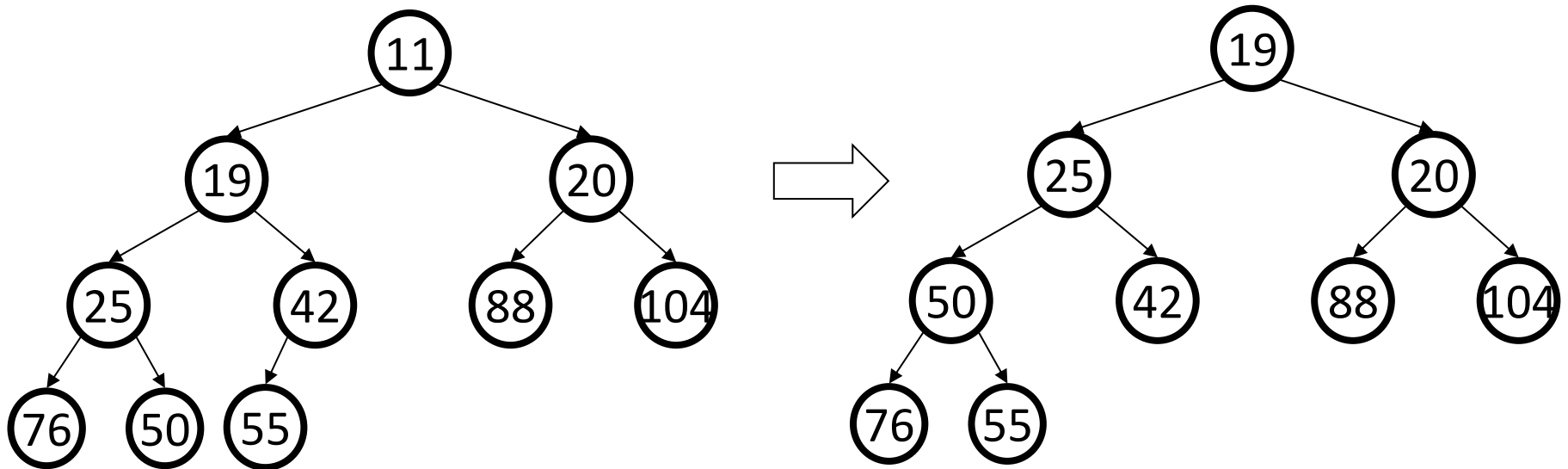
- Suppose we have the min-heap shown below.
- Show the state of the heap tree after remove has been called 4 times, and which elements are returned by the removal.



After the second remove call

# Bubble-down

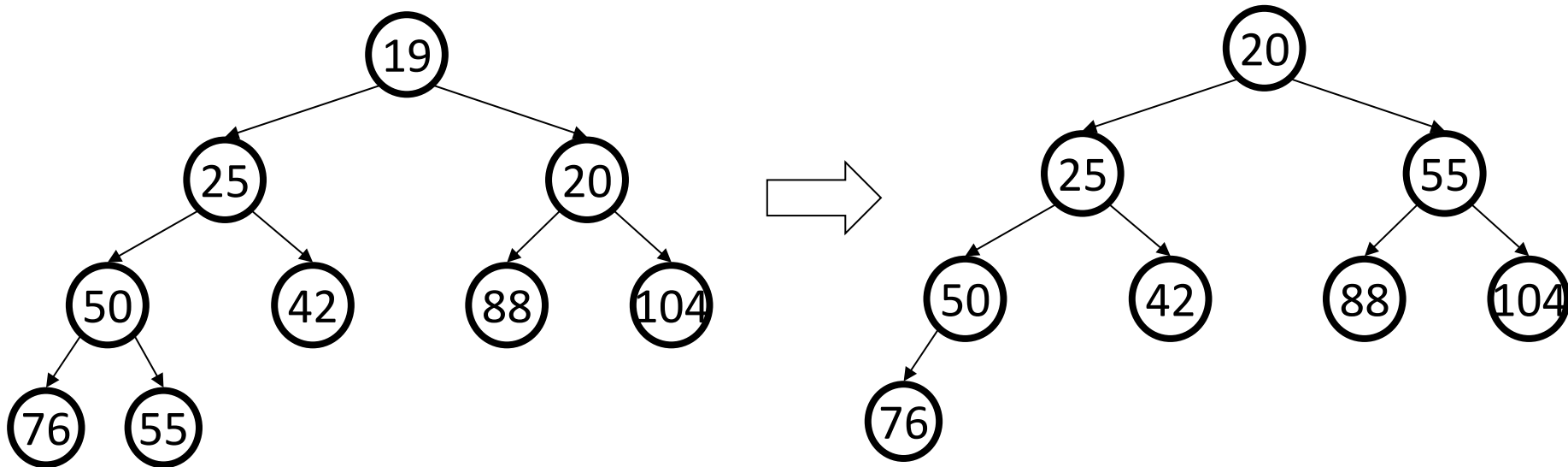
- Suppose we have the min-heap shown below.
- Show the state of the heap tree after remove has been called 4 times, and which elements are returned by the removal.



After the third remove call

# Bubble-down

- Suppose we have the min-heap shown below.
- Show the state of the heap tree after remove has been called 4 times, and which elements are returned by the removal.



After the fourth remove call