

1. List the members of your group below:

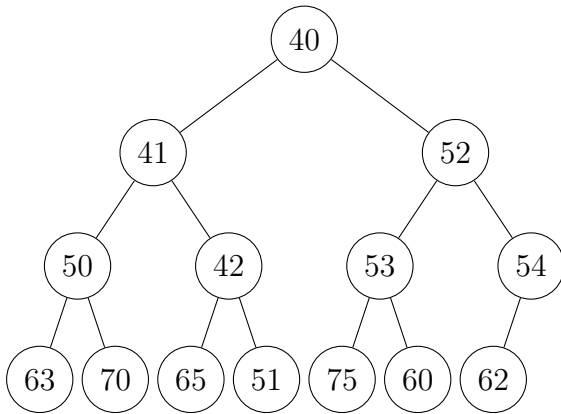
2. Using conventional graphical notation, depict the complete binary tree encoded by the following array, based on the textbook's method.¹

i:	1	2	3	4	5	6	7	8	9	10	11	12	13	14
a[i]:	50	40	60	70	65	75	62	63	41	42	51	52	53	54

3. Mark all violations of the *(min-)heap order property* in the tree of Question 2 by annotating the corresponding edge with a *V*.

¹Mark Allen Weiss, *Data Structures and Problem Solving Using Java*, 3rd edition (Addison-Wesley, 2006), §21.1.1.

4. Depict the state of the following binary min-heap after all actions triggered by a *deleteMin* operation have completed. Repeat for three additional *deleteMin* operations.



5. Depict the state of the final heap of Question 4 after all actions triggered by a $insert(57)$ operation have completed. Repeat for operations $insert(33)$, $insert(67)$, and $insert(40)$.

6. *Heapify* the tree of Question 2 using the *buildHeap* operation from the textbook.² Depict intermediate states of the tree, including at least the states after *buildHeap* completes each level of the tree.

²*Idem*, §21.3.