1. Mark all of the following true expressions about the height of a binary search tree of size $N$.

- $O(\log N)$
- $\Theta(\log N)$
- $\Omega(\log N)$
- $O(N)$
- $\Theta(N)$
- $\Omega(N)$

2. Mark all of the following true expressions about the height of a binary heap of size $N$.

- $O(\log N)$
- $\Theta(\log N)$
- $\Omega(\log N)$
- $O(N)$
- $\Theta(N)$
- $\Omega(N)$

3. Draw the separate-chaining hash table with $M = 4$ buckets that results from inserting the following items in this order: 1, 2, 3, 7, 8, 9, 5. Assume that the hash function for integers returns the value of the integer and that items are added to the end of the linked list.

4. Draw the separate-chaining hash table after resizing to $M = 8$ buckets.