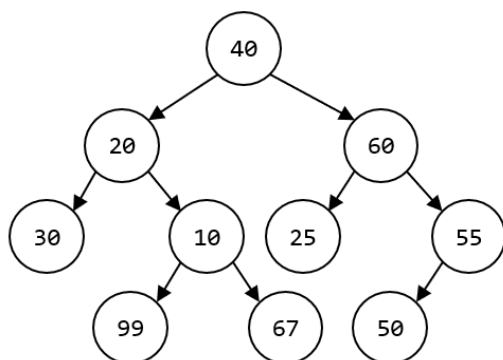
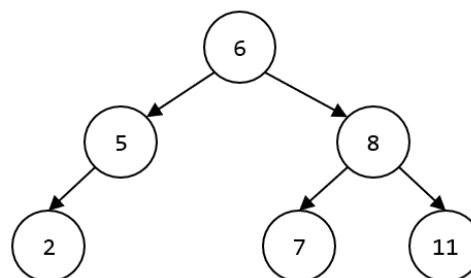


Quizlet 7



For the tree above, select if it is a Binary Tree, Binary Search Tree, or Neither.

- ☒ **Binary Tree**
- ☐ Binary Search Tree
- ☐ Neither



For the tree above, if we run **linear** search, what is the worst case runtime?

_____ **$O(n)$** _____

For the tree above, if we run **binary** search, what is the worst case runtime?

_____ **$O(\log n)$** _____

Select **ALL** statements that correctly describe 'work' and 'span' in parallel algorithms.

- ☒ **Work is the total number of actions across all cores**
- ☐ Span equals the total work divided by the number of cores
- ☒ **Span is the length of the longest sequential chain of actions**
- ☐ Work and span are always equal

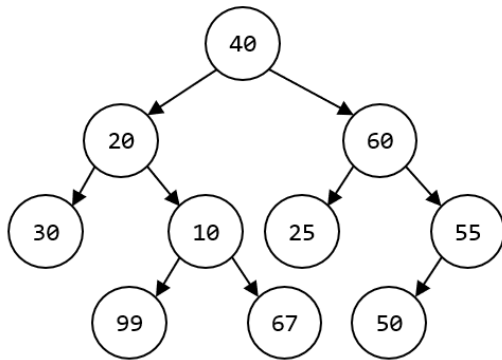
If $P = NP$, which of the following would immediately become true? Select **ALL** that apply.

- ☐ Every NP problem has an exponential-time solution ($O(k^n)$)
- ☒ **Every NP problem has a polynomial-time solution ($O(n^k)$)**
- ☐ No heuristic would ever be needed
- ☐ All problems become $O(1)$

Which of the following are true about hashing? Select **ALL** that apply.

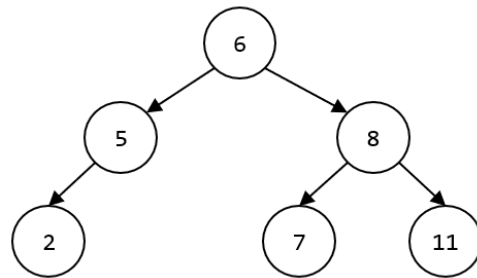
- ☒ **Searching a dictionary for a key is $O(1)$**
- ☐ Lists use hashed search
- ☒ **Hash functions map values to integers**
- ☒ **Mutable values should not be used as keys**

Quizlet 7



For the tree above, select if it is a Binary Tree, Binary Search Tree, or Neither.

- ☐ Binary Search Tree
- ☒ **Binary Tree**
- ☐ Neither



For the tree above, if we run **linear** search, what is the worst case runtime?

_____ **$O(n)$** _____

For the tree above, if we run **binary** search, what is the worst case runtime?

_____ **$O(\log n)$** _____

Select **ALL** statements that correctly describe 'work' and 'span' in parallel algorithms.

- ☐ Span equals the total work divided by the number of cores
- ☒ **Span is the length of the longest sequential chain of actions**
- ☒ **Work is the total number of actions across all cores**
- ☐ Work and span are always equal

If $P = NP$, which of the following would immediately become true? Select **ALL** that apply.

- ☐ Every NP problem has an exponential-time solution ($O(k^n)$)
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Which of the following are true about hashing? Select **ALL** that apply.

- ☒ **Searching a dictionary for a key is $O(1)$**
- ☐ Lists use hashed search
- ☒ **Mutable values should not be used as keys**
- ☒ **Hash functions map values to integers**