

**Q** 2-3 Tree Insertion

Draw the 2-3 tree that results from inserting these items in order: 8, 2, 4, 5, 7, 9.

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**Q1:** Draw the 2-3 tree that results from inserting these items in order: 8, 2, 4, 5, 7, 9.

**Q** Max-Height and Min-Height 2-3 Trees

Give an insertion order for the keys 1, 2, 3, 4, 5, 6, 7 that results in a **max-height** 2-3 Tree.

What about for a **min-height** 2-3 Tree?

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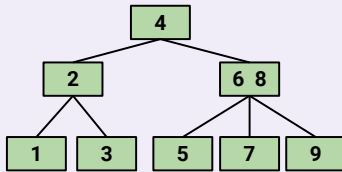
**?:** What is the least number of keys we can stuff into a 2-3 Tree node? The greatest number of keys?

**Q1:** Give an insertion order for the keys 1, 2, 3, 4, 5, 6, 7 that results in a max-height 2-3 Tree.

**Q2:** What about for a min-height 2-3 Tree?

**Q** 2-3 Tree Insertion Order

Give two insertion orders that both result in the following 2-3 tree.



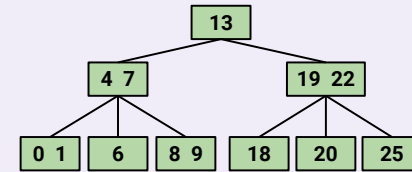
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**Q1:** Give two insertion orders that both result in the following 2-3 tree.

**Q** 2-3 Tree Shapes

What is the **minimum** number of items that we can insert and **increase** the height?

What is the **maximum** number of items that we can insert and **not increase** the height?



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**Q1:** What is the minimum number of items that we can insert and increase the height?

**Q2:** What is the maximum number of items that we can insert and not increase the height?