

# Graphs



Eulerian



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by Christine Alvarado, Mia Minnes, and Leo Porter, 2015.

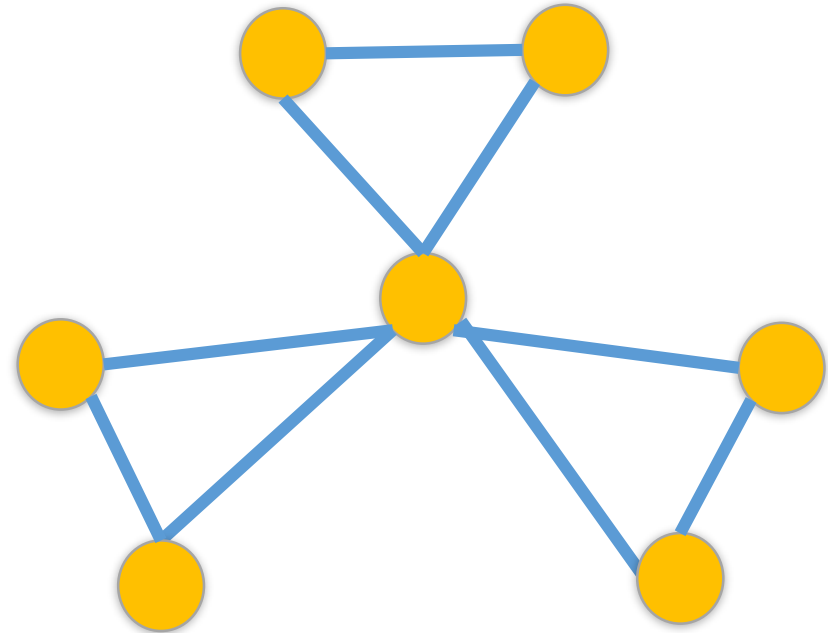
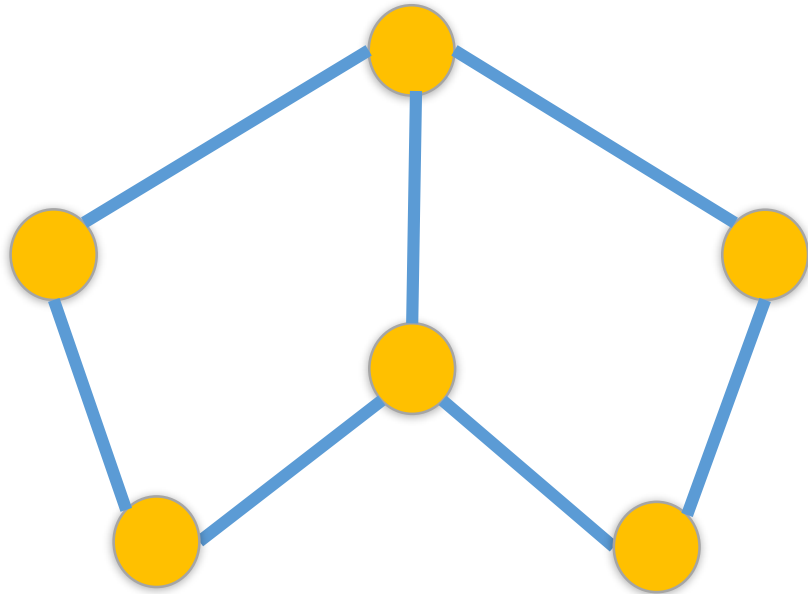
# How to test?

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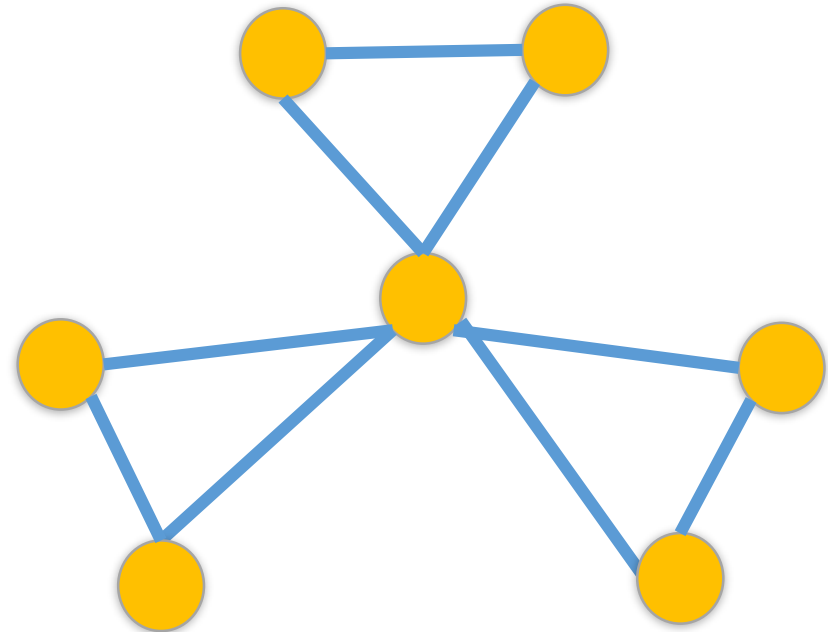
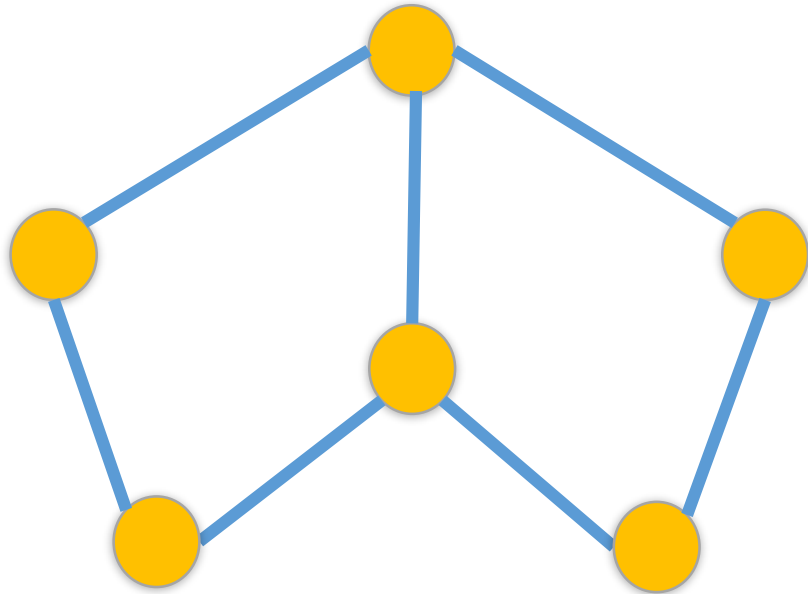
**Brute force:** generate all sequences of vertices

- are they paths?
- are they Eulerian?

**There's an easier way ...**

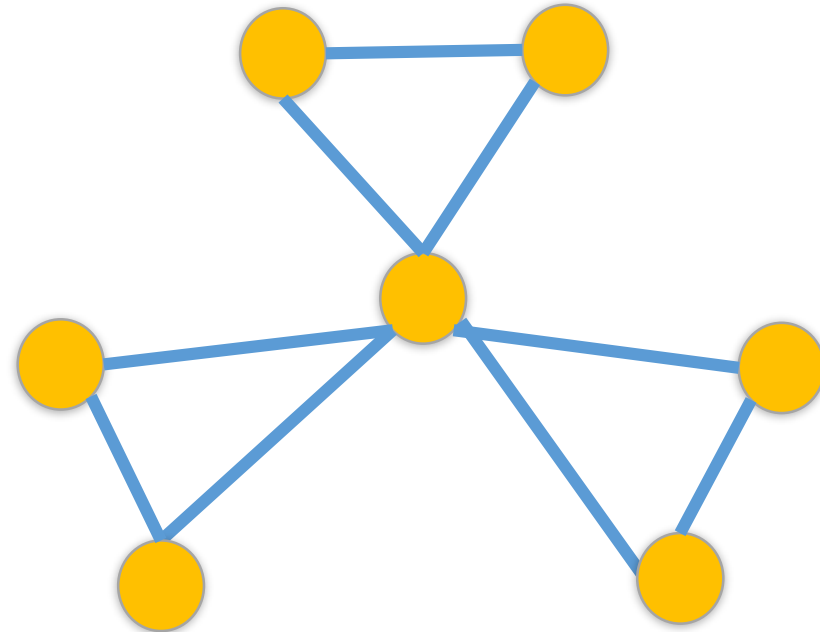
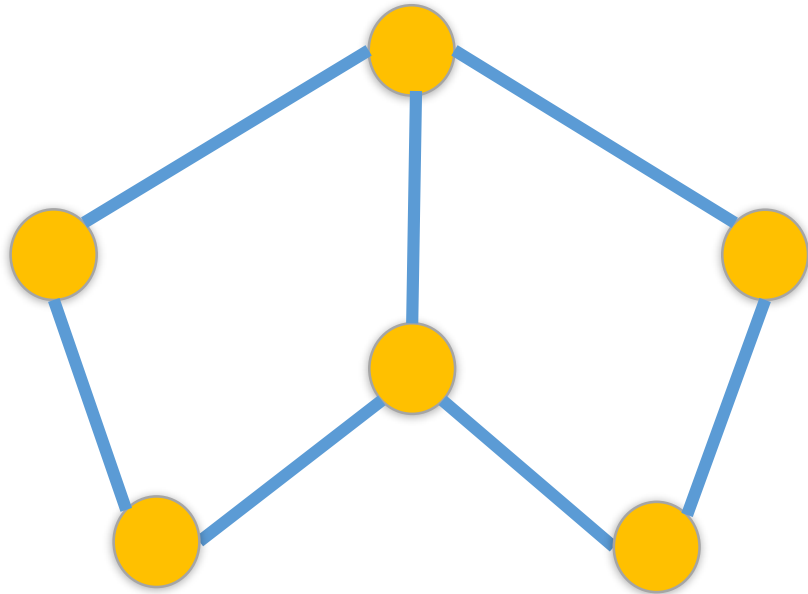


**There's an easier way ...**



**Eulerian  $\leftrightarrow$  at most 2 vertices of odd degree**

and faster!  
There's an easier way ...



**Eulerian  $\leftrightarrow$  at most 2 vertices of odd degree**



**Small changes can lead to big differences!**