(十二) 图论: 匹配与网络流
(Matching and Network Flow)

魏恒峰

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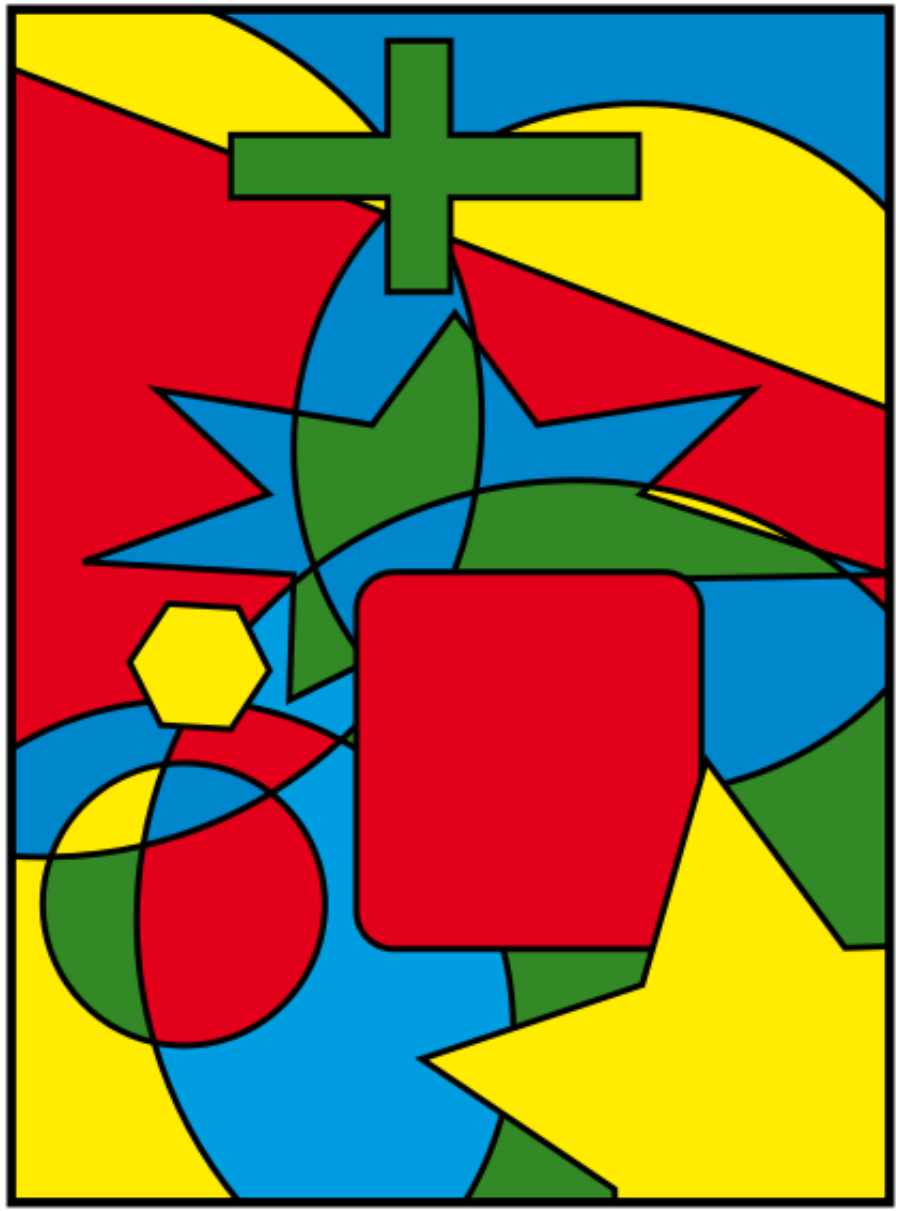

Theorem (Four Color (Map) Theorem (informal))

Every map can be colored with only four colors such that no two adjacent regions share the same color.

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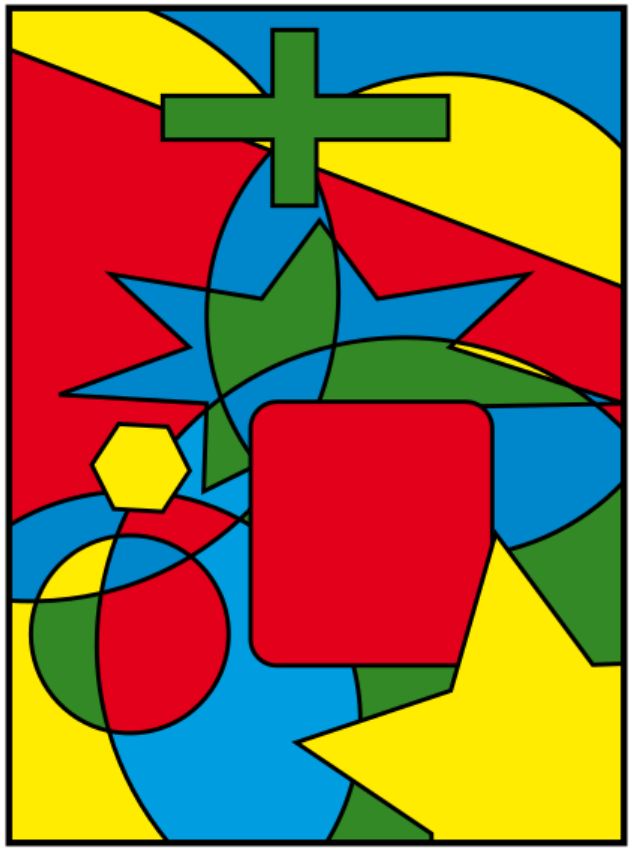

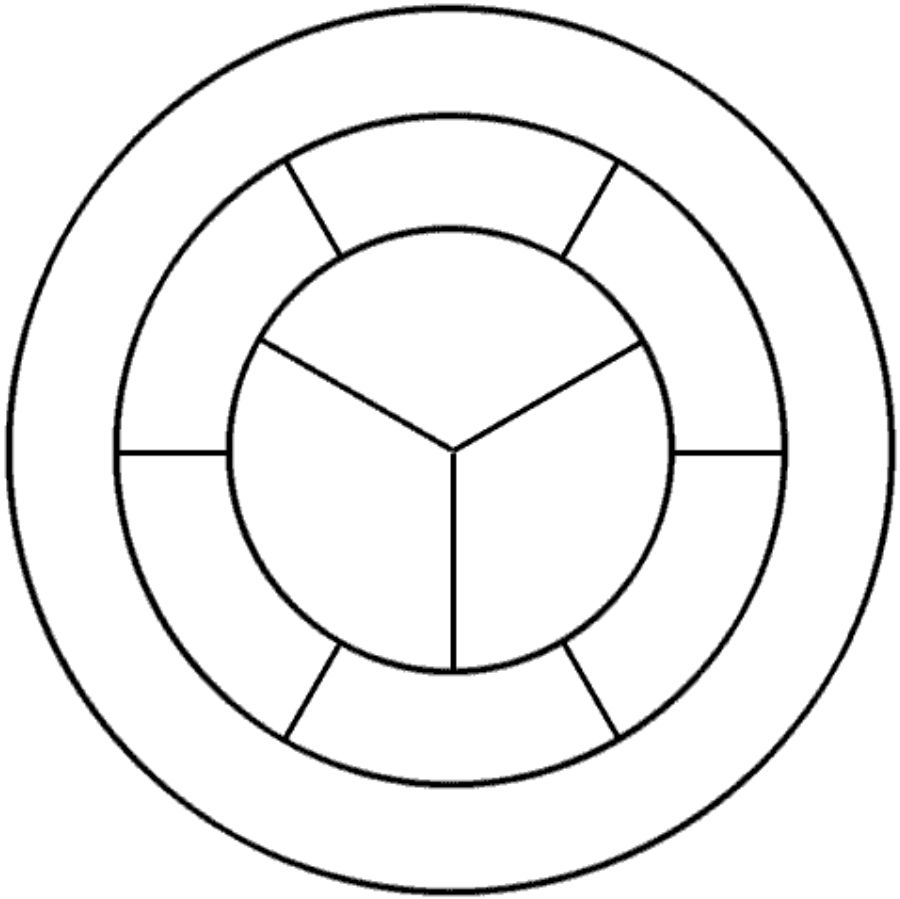

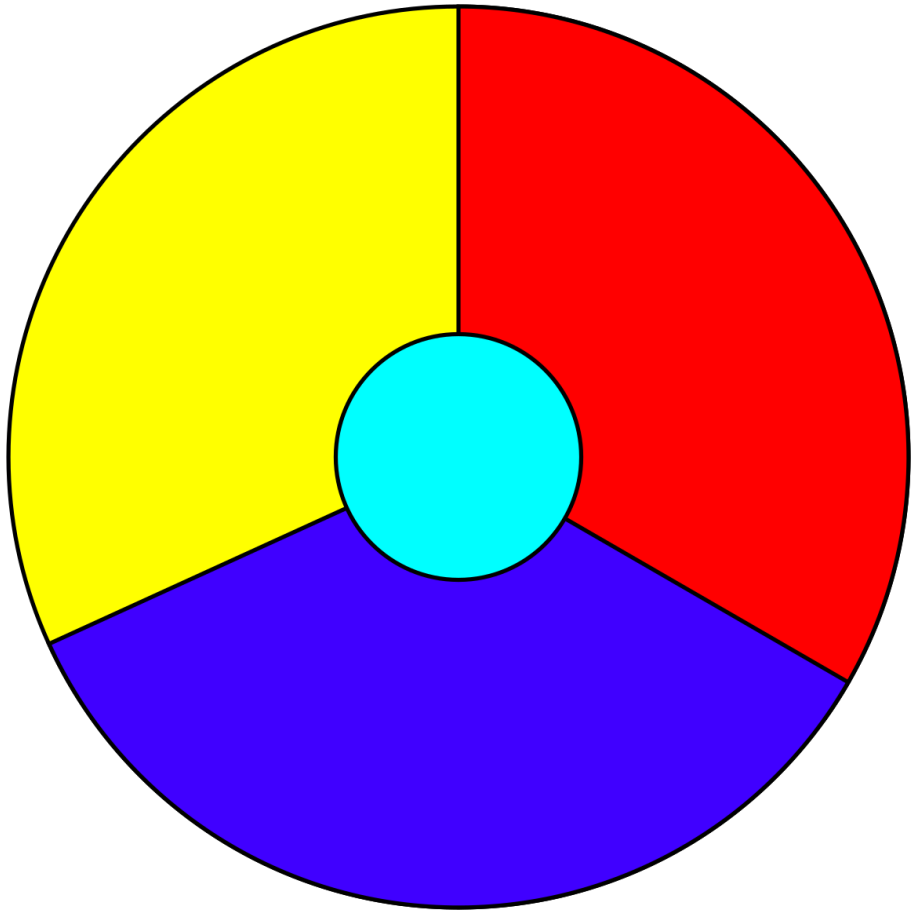

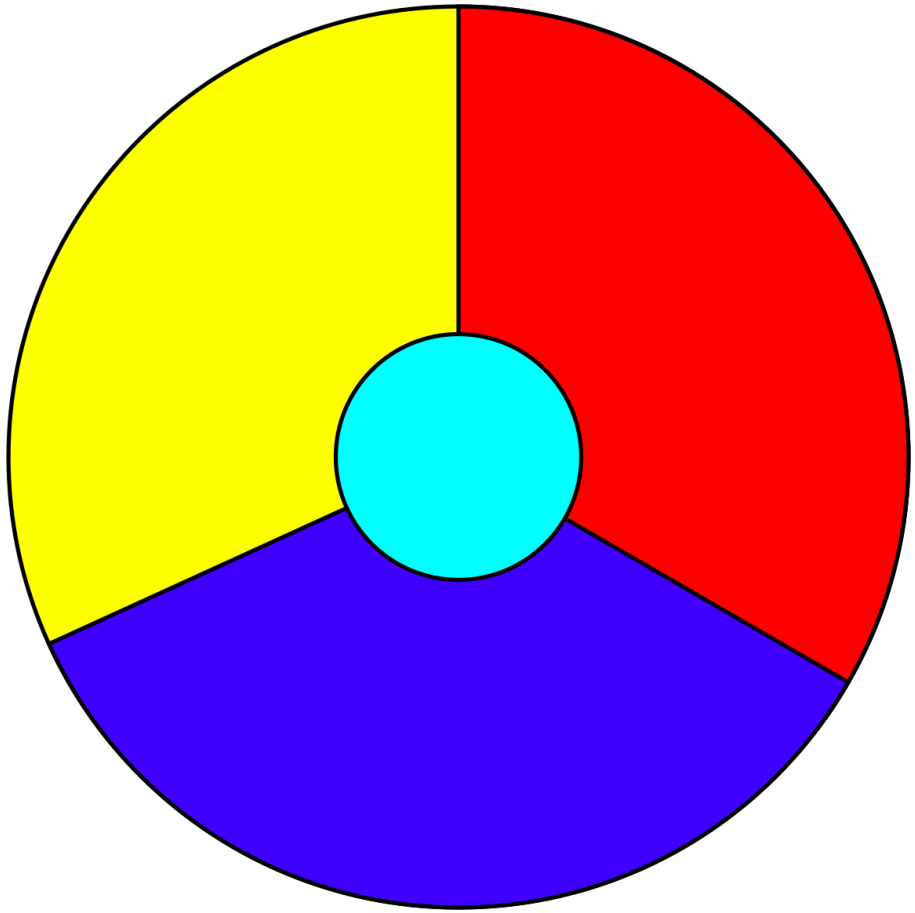

Every region is adjacent to the other 3 regions.

What if we have a map which contains 5 regions so that every region is adjacent to the other 4 regions?

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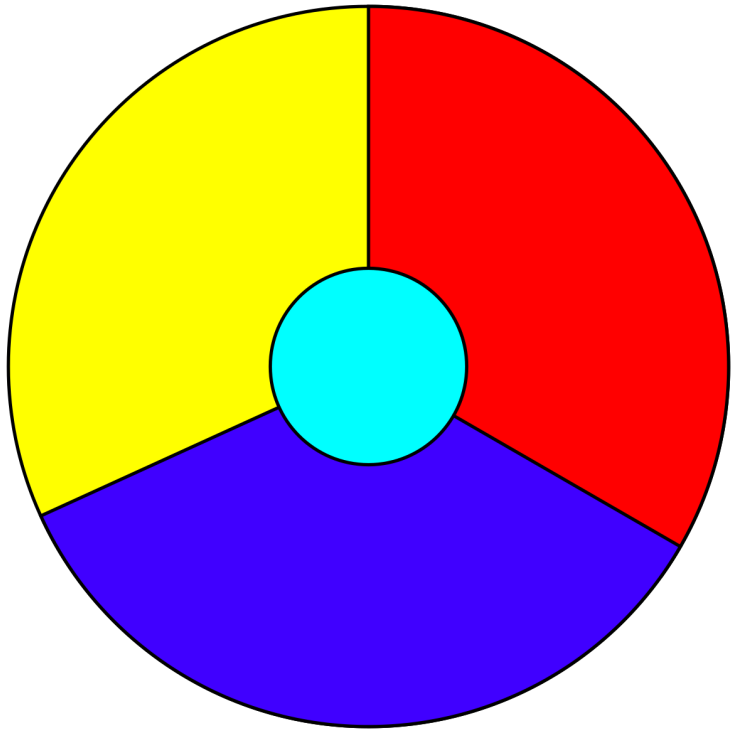
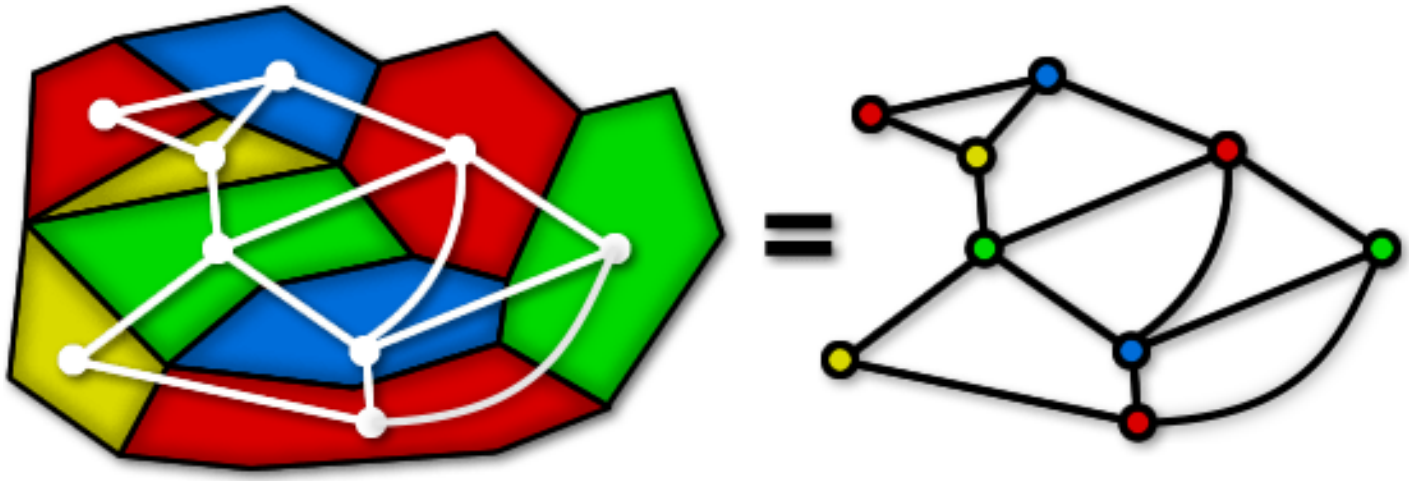
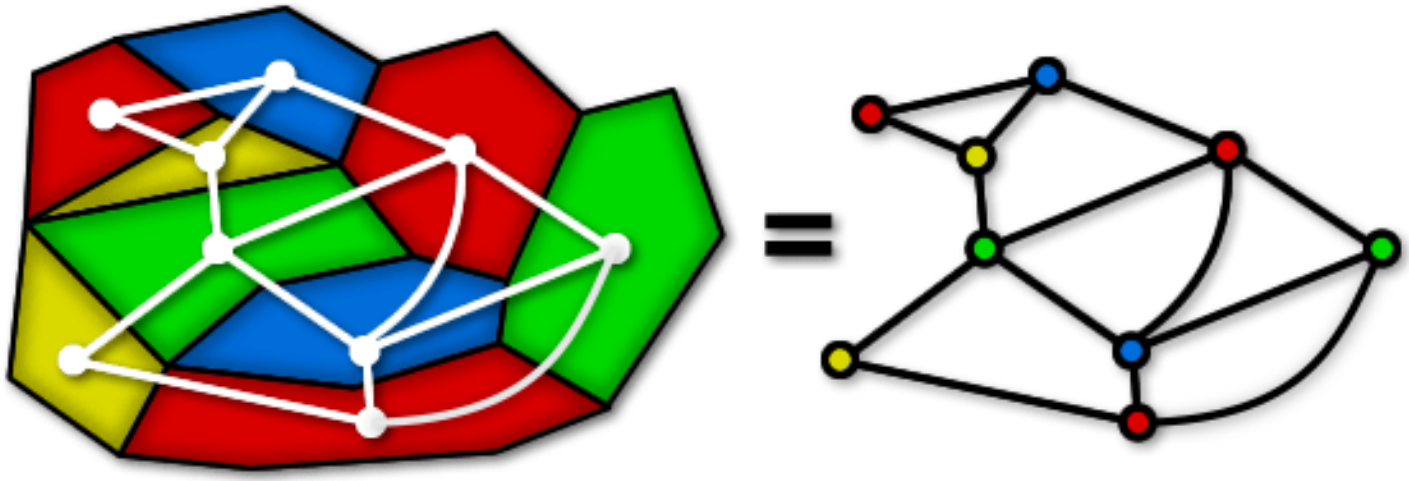
What does Four Color Theorem to do with Graph Theory?



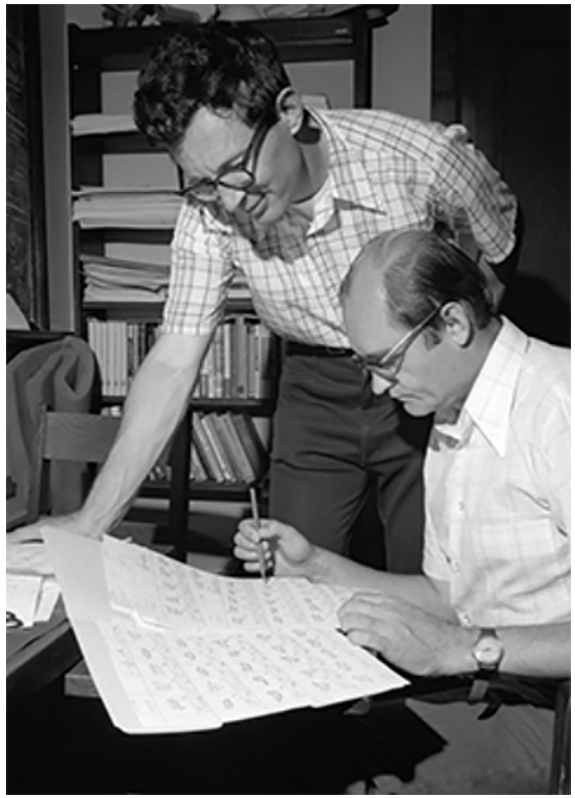




Every map produces a planar graph.

Theorem (Four Color Theorem (Kenneth Appel, Wolfgang Haken; 1976))

Every simple planar graph is 4-colorable.



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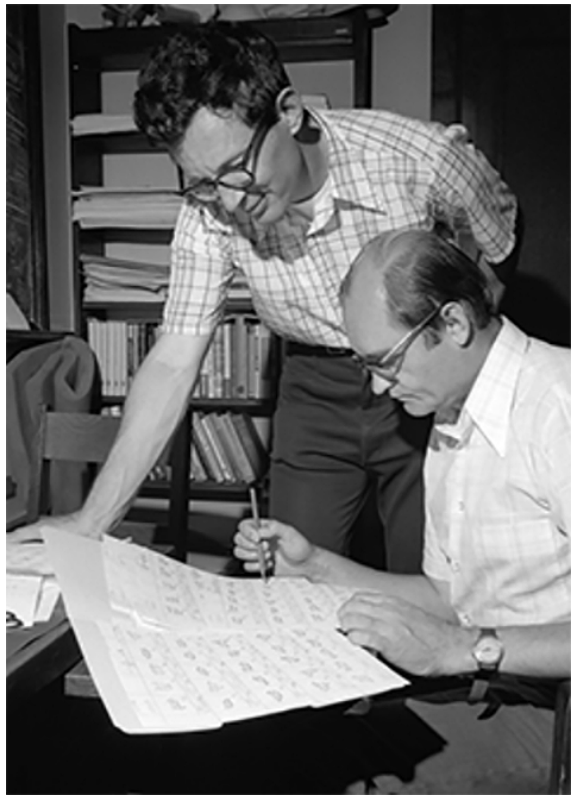

I will *not* show its proof (which I don't understand either)!

Theorem

Every simple planar graph is 6-colorable.

Theorem

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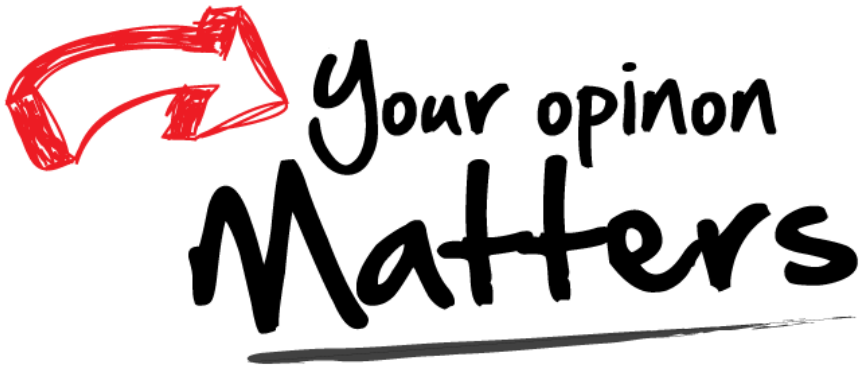
Theorem (Percy John Heawood (1890))

Every simple planar graph is 5-colorable.


Thank
You!



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