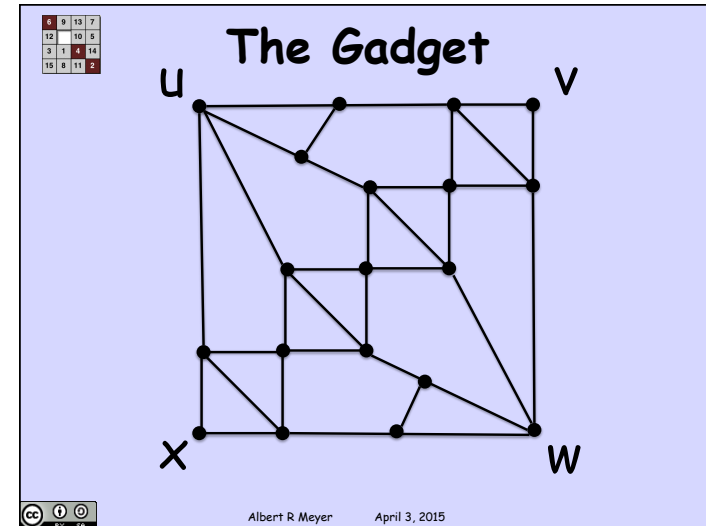


6	9	13	7
12	10	5	
3	1	4	14
15	8	11	2

# 3-Color Planar Crossover Gadget


(due to Larry Stockmeyer  
*ACM SIGACT News*  
July 1973, pp 19-25)

 Albert R Meyer April 3, 2015




6	9	13	7
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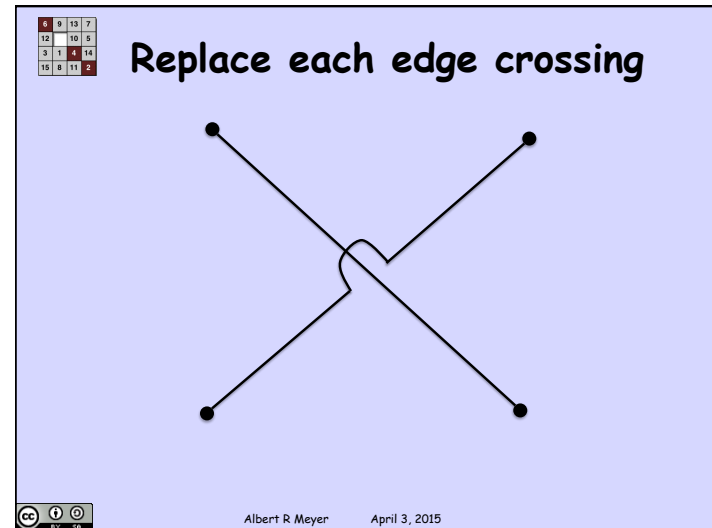
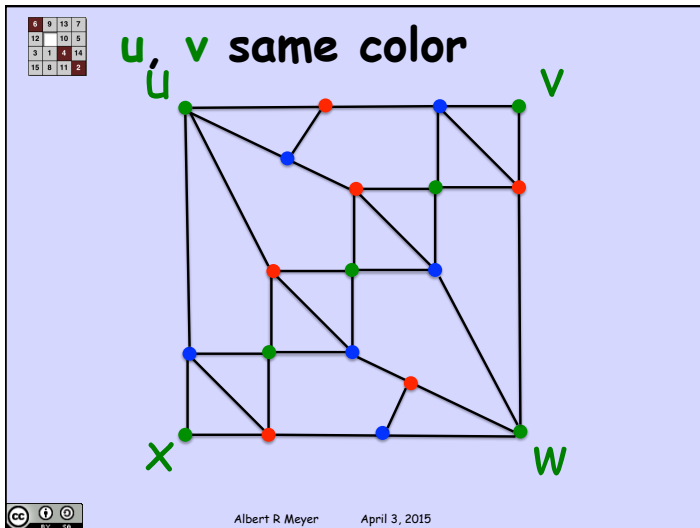
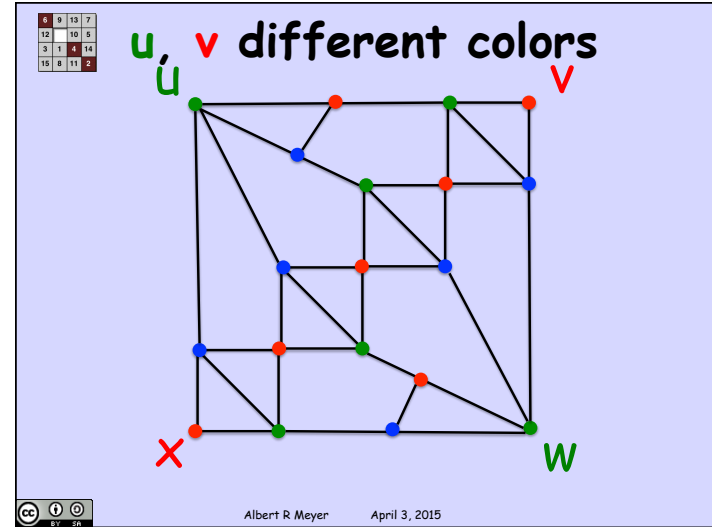
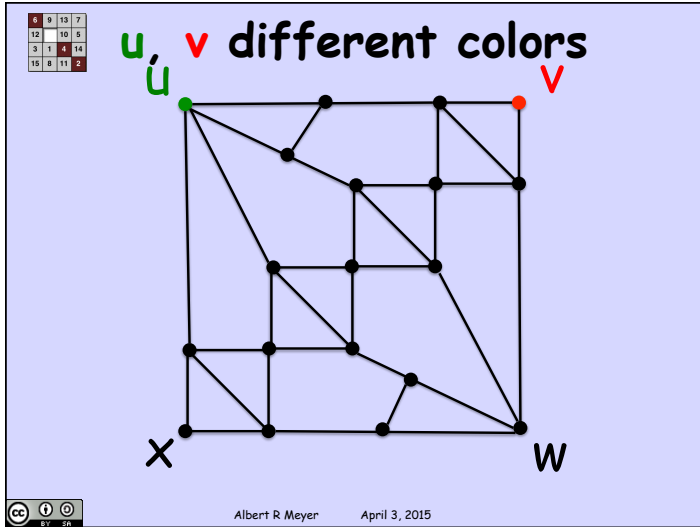
- Any assignment of colors to **u** and **v** can be extended to a 3-coloring of the gadget

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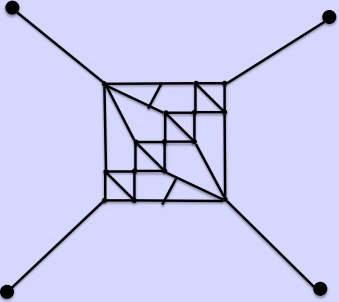
- Any assignment of colors to **u** and **v** can be extended to a 3-coloring of the gadget
- In any 3-coloring, the colors of **u** and **w** are the same, and the colors of **v** and **x** are the same


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6	13	7	
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...with a gadget






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...to get a planar graph  
that is 3-colorable iff  
the original graph is  
3-colorable



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