

Informal Definition: Planar Graph

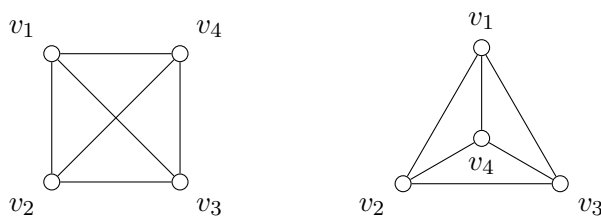
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After the second test, the next topic will be graph coloring, using Chapter 10 of Chartrand and Zhang.

In reading Chapter 10, you will encounter the word “planar” applied to graphs. We are skipping the chapter on planarity, so I need to explain this word to you. You don’t need any of the theorems from the planarity chapter, just the meaning of this word.

Informally, a graph is planar if there is any way to draw it without edges crossing. For example, consider K_4 . It can be drawn with crossing edges, but as shown here, it can also be drawn without crossing edges. Therefore, K_4 is planar:



On the other hand, K_5 is nonplanar. No matter how you rearrange the vertices, there is no way to draw this graph without edges crossing:

