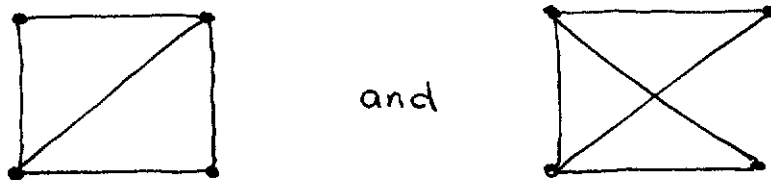


So much for scientific visualization

An undirected graph without self-loops and without multiple edges contains a triangle if it has 4 vertices and 5 edges. The simplest proof observes that the graph in question is the complete 4-graph from which 1 edge has been removed: any triple vertices that does not contain both endpoints of the removed edge yields a triangle. If you insist on making a picture, you may consider



I have asked quite a few people how they would prove the existence of a triangle with 4 vertices and 5 edges. The majority found itself observing both



seduced to make the "distinction" of whether the missing edge was a side or a diagonal.

A sobering observation!

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