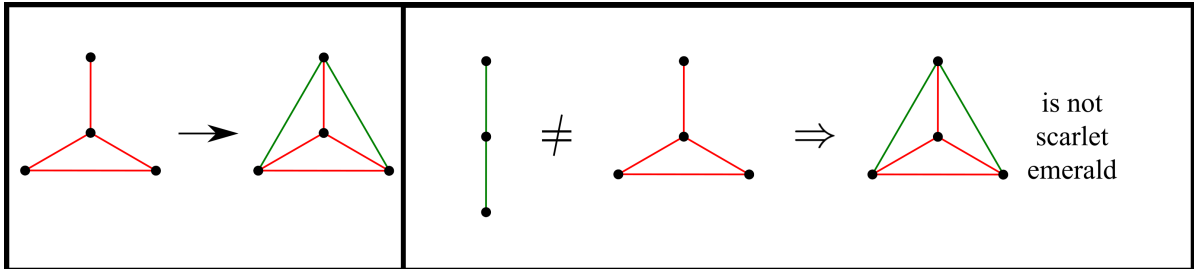


Riddle 16

Suppose that we colour a graph's edges in scarlet. And then decide to depict any two vertices not related by a scarlet edge as related instead by an emerald edge. Then a graph is *scarlet emerald* if its scarlet edges form the same graph as its emerald edges do.



Prove that it is not possible for a planar scarlet emerald to have ≥ 10 vertices.
 Find a planar scarlet emerald with 8 vertices.
 And any kind of scarlet emerald with 9 vertices.

+ Find a scarlet emerald with 9 vertices and crossing number 1 .
 Can you find a nonplanar scarlet emerald with 8 vertices?
 A planar scarlet emerald with 9 vertices?