به‌نام نای‌الله

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☑ تمرینات تحویلی

Exercises

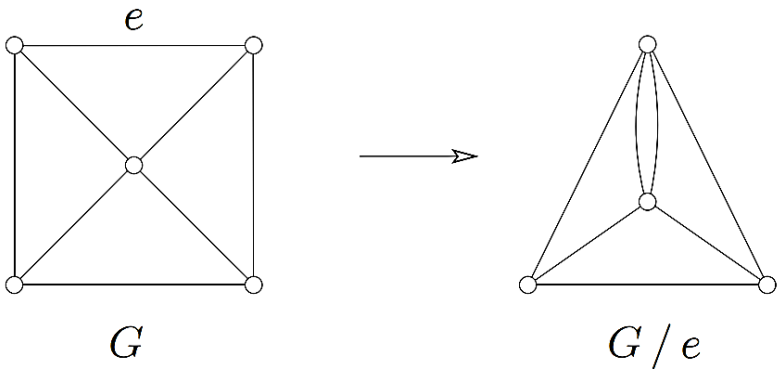
1. Let G be a graph and e a link of G. Then

$$t(G) = t(G \setminus e) + t(G/e)$$

☑ Note:

- We denote the number of spanning trees in an arbitrary graph G by t(G). Cayley's Formula says that $t(K_n) = n^{n-2}$.
- An edge with identical ends is called a loop, and an edge with distinct ends a link.
- Edge Contraction:

To contract an edge e of a graph G is to delete the edge and then (if the edge is a link) identify its ends. The resulting graph is denoted by G/e (see Figure below).



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2. Show that the graph G is a forest if and only if every induced subgraph of G has a vertex of degree at most one.

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3. Let the maximum degree of a vertex in a tree be Δ. Show that there are at least Δ leaves in the tree.
