1. Check how the following invariants can change by taking a minor or a contraction of the graph:
   (a) minimum vertex cover size,
   (b) maximum independent set size,
   (c) minimum feedback vertex size,
   (d) minimum dominating set size,
   (e) maximum clique size,
   (f) length of the longest path,
   (g) length of the longest cycle.
2. Prove the following statement: for every $k \geq 1$ and planar graph G, the vertices $V(G)$ has a partition into k sets $V_1, \ldots, V_k$ such that the treewidth of $G \setminus V_i$ has treewidth at most $f(k)$ for some function f.
3. Is it possible to generalize Courcelle's Theorem from bounded treewidth to bounded local treewidth?
4. Design a PTAS for Dominating Set on planar graphs.
5. Reduce the problem of finding a cycle of length at least k to the problem of finding a cycle of length exactly k.
6. Draw a K_6 on the torus (extra task: draw K_7).