Exercise 1

Given any $g, r \geq 3$, does there exist a an r-regular bipartite graph of girth at least g?

. . . .

Exercise 2

Find the maximum number of edges in a graph on n vertices that does not have two vertex-disjoint triangles.

. . . .

Exercise 3   (3.21)

Suppose x is not a cut vertex and its degree is at least $2k$. Prove that there are at least k edge-disjoint cycles containing x.

. . . .