Part I:
Read Fulton, Chapter 1, sections 1-7.
Do problems:
  1.4-1.6 on pp.6-7;
  1.8, 1.9, 1.14, 1.15 on pp.9-10;
  1.25, 1.26, 1.29 on pp.17-18;
  1.35 on p.24.

Part II:
Read Hartshorne, Chapter I, sections 1-3.
1. Do problems:
   1.11, 2.2, 2.9-2.13, 3.1, 3.2.

2. Following Bourbaki, call a topological space \textit{quasi-compact} if every open cover has a finite subcover. Call it \textit{compact} if it is quasi-compact and Hausdorff.
   (a) Show that every affine variety is quasi-compact in the Zariski topology, but that no affine variety, except for a finite set of points, is compact in the Zariski topology.
   (b) Which affine varieties over $\mathbb{C}$ are compact in the (classical) metric topology?
   (c) Does your answer to (b) remain true over $\mathbb{R}$?