A. Section 24 Exercise 8c, which is about the continuous image of a path-connected space.

B. For this problem, let $\mathbb{R}^n$ have the Zariski topology (which was defined in our Day 02 Homework). In the case $n = 1$, prove that every subspace $Y \subseteq \mathbb{R}^n$ is compact.

Epilogue: You are invited, but not required, to consider the $n = 2$ case as well.

C. Section 26 Exercise 5, which is about "separating" subspaces of a Hausdorff space. You may use Lemma 26.4, whether or not we had time to prove it in class today. (This is a typical example of how compactness helps us prove various properties, that we might like spaces to have.)