Homework-5 for Math 431   Due Date: 29 April 2022 Friday

Show that a k-algebra B is isomorphic to the affine coordinate ring of some algebraic set in $\mathbb{A}^n$, for some n, if and only if B is a finitely generated k-algebra with no nilpotent elements. Explain why you need no nilpotent elements.

Write your solutions on A4 papers and staple them together. Do not use other fancy covers!

Thank you.