Algebraic geometry : HW 8

1. Let A be a ring, and let I be a proper ideal of A such that every element of A not in I is a unit. Then show that A is a local ring, with I its unique maximal ideal.

2. Let A be a ring and $\mathfrak{p}$ be a prime ideal of A. Show that $A_{\mathfrak{p}}$ is a local ring with maximal ideal generated by the image of $\mathfrak{p}$ in $A_{\mathfrak{p}}$.