Problem Set 2A (Last revised 9/16/2008)

2.2 Determine the ring of regular functions on $\mathbf{A}^2 - \{(0,0)\}$
Proof:

2.3 Use 2.2 to show that $\mathbf{A}^n - \{(0,0,\ldots,0)\}$ is not isomorphic to an affine variety when $n \geq 2$. What is the situation for $n = 1$?
Proof:

2.5 Show that the number of monomials of degree d in $n+1$ variables is $\binom{n+d}{n}$.