Math 526 – Homework 8

Due 8:30am on Thursday, November 3, 2016

Please indicate any sources you used for a given problem on the solution to that problem. For example, if you worked with another student to get the solution to a problem, please indicate who. You are welcome to work together in small groups, but please try the problems on your own first.

Problem 1. Let k be an algebraically closed field and let $J \subset k[x_0, \ldots, x_n]$ be a homogeneous ideal. Show that $\mathcal{J}(\mathcal{X}(J))$ equals $\sqrt{J} : \langle x_0, \ldots, x_n \rangle$.

Problem 2. Hassett 9.13

Problem 3. Hassett 10.5(abc)