

University of Waterloo
Algebraic Geometry - Summer 2015
Assignment 2

Sina Motevalli 20455091

Problem 1

Part a

Let X be an irreducible algebraic set. Let $U \subset X$ be Zariski open. Let V be the closure of U . Assume for a contradiction that $X \neq V$ (ie U is not dense). Then we have: $X = V \cup U^c$, but as U is open U^c is closed and V is also closed, Thus X is reducible. COntradiction.

Part b