

Theorem 6: If M is an open point set, then the set of all points not in M is a closed point set.

Proof: Let M be an open point set and let p be a limit point of M^c . Assume p is an element of M for contradiction. Since M is an open point set, there exists an open interval (a,b) such that p is an element of (a,b) and (a,b) is a subset of M . This means that p cannot be a limit point of M^c because no point of (a,b) touches M^c . This is a contradiction, so the assumption was wrong, and p is an element of M^c . Therefore, if M is an open point set, then the set of all points not in M is a closed point set.