



planetmath.org

Math for the people, by the people.

Bézout's theorem (Algebraic Geometry)

| | |
|------------------|---------------------------------|
| Canonical name | BezoutsTheoremAlgebraicGeometry |
| Date of creation | 2013-03-22 14:36:45 |
| Last modified on | 2013-03-22 14:36:45 |
| Owner | rspuzio (6075) |
| Last modified by | rspuzio (6075) |
| Numerical id | 9 |
| Author | rspuzio (6075) |
| Entry type | Algorithm |
| Classification | msc 14A10 |

The classic version of Bézout's theorem states that two complex projective curves of degrees m and n which share no common component intersect in exactly mn points if the points are counted with multiplicity.

The generalized version of Bézout's theorem states that if A and B are algebraic varieties in k -dimensional projective space over an algebraically complete field and $A \cap B$ is a variety of dimension $\dim(A) + \dim(B) - k$, then the degree of $A \cap B$ is the product of the degrees of A and B .