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Ellina Grigorieva* (egrigorieva@twu.edu), PO BOX 425262, Denton, TX 76204. *Geometric approach to solving algebraic problems.*

Sometimes it is beneficial to look at an algebraic problem from a geometric point of view. For example, for positive values of x and y , the equation $x^2 + y^2 = a^2$ can be seen as the relationship between sides of a right triangle with hypotenuse a and legs x and y . Using Law of Cosines for a triangle, equation $x^2 + x*y + y^2 = a^2$ also can be considered as a relationship between side of a triangle, a expressed in terms of two other sides, x and y , forming an angle of 120 degrees. In this talk, I will demonstrate how geometric approach can be used to solve many complex algebraic optimization problems and to prove some unusual inequalities. (Received August 22, 2015)