

# A Quadratic Function Example

Linear Algebra  
MATH 2076



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It is simple to use geogebra to “see” the curve  $4x^2 + 6xy - 4y^2 = 5$ .

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This is easy to check, right?

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To practice your matrix arithmetic skills, check this!



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Now we use the fact that  $A = QDQ^T$  to thoroughly analyze the level curve  $q(x, y) = 5$ ; this is the curve which is the solution set for the quadratic equation  $4x^2 + 6xy - 4y^2 = 5$ .

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Let's look at a picture.