MAT102 - College Algebra - Polynomial and Rational Functions

3.1 Quadratic Functions and Applications [1]

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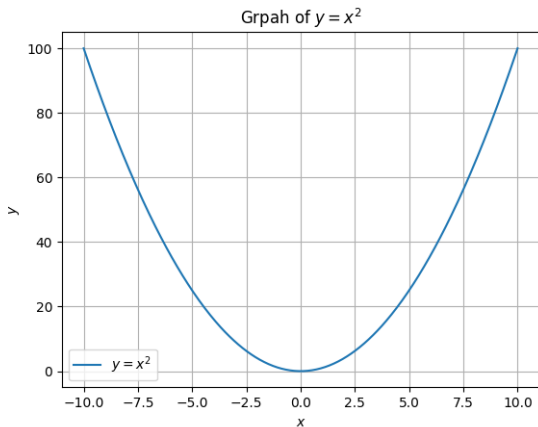# Graph a Quadratic Function Written in Vertex Form

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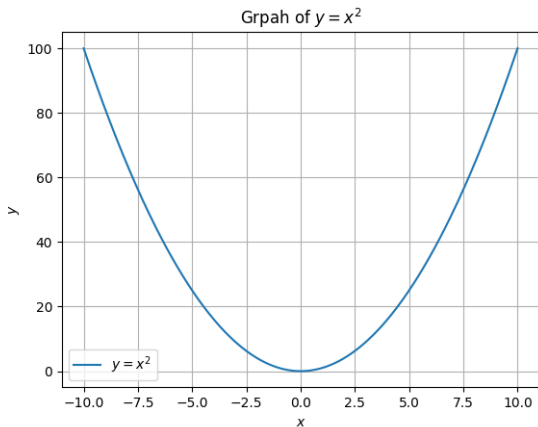- The function defined by $f(x) = ax^2 + bx + c$ ($a \neq 0$) is called a **quadratic function.**

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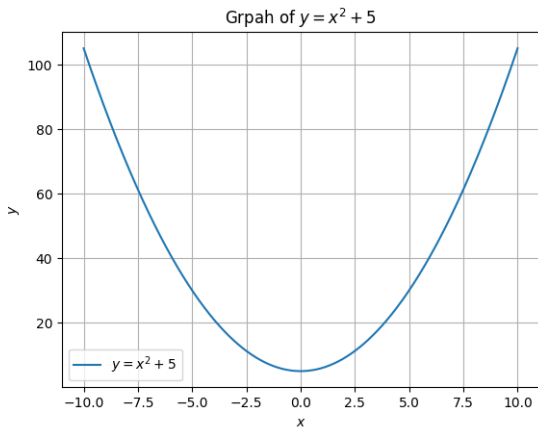

Grpah of $y = x^2$

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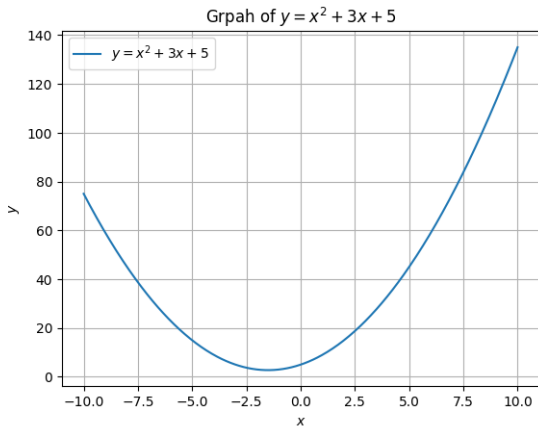
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Grpah of $y = x^2 + 3x + 5$

Legend: $y = x^2 + 3x + 5$

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  minimum point. The minimum value of f is k.
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  minimum point. The minimum value of f is k.
- ▶ The axis of symmetry is $x = h$. This is the vertical line that
  passes through the vertex.

Example - Analyzing and Graphing a Quadratic Function

References

Julie Miller and Donna Gerken.
College Algebra.
McGraw-Hill Education, New York, 2nd edition, 2016.