

# 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

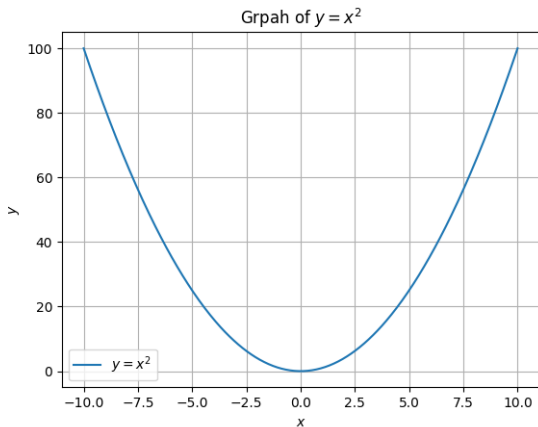
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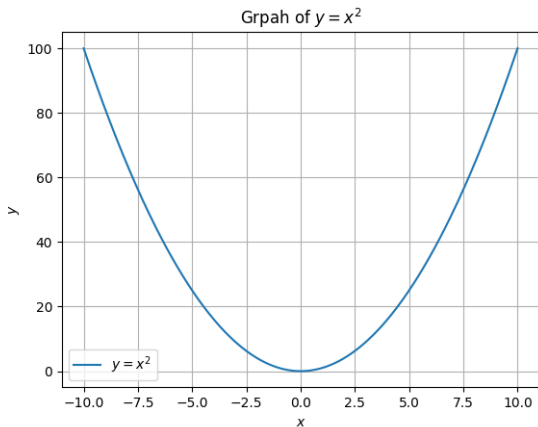
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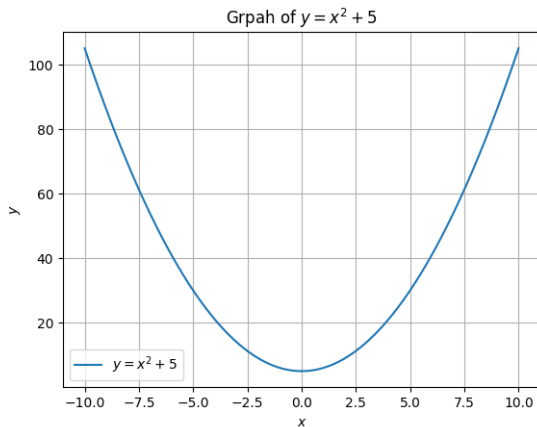


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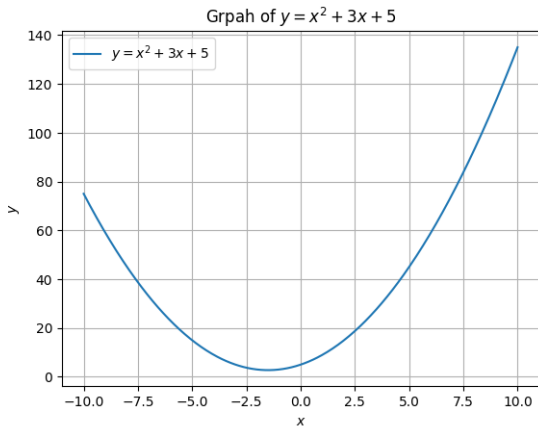
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- ▶ The axis of symmetry is  $x = h$ . This is the vertical line that passes through the vertex.

## Example - Analyzing and Graphing a Quadratic Function

Give  $f(x) = -2(x - 1)^2 + 8$ ,

1. Determine whether the graph of the parabola opens upward or downward.

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8. Write down the domain and range in interval notation.

## Example - Writing a Quadratic Function in Vertex Form

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# References



Julie Miller and Donna Gerken.

*College Algebra.*

McGraw-Hill Education, New York, 2nd edition, 2016.