

Writing Equations for Quadratic Functions

Translating from Written Descriptions

Formula:

Standard Form of a Quadratic Function

$f(x) = ax^2 + bx + c$, where $a \neq 0$ The y-intercept is c .

Vertex Form of a Quadratic Function

$f(x) = a(x - h)^2 + k$, where $a \neq 0$ The vertex is located at (h, k) .

Factored Form of a Quadratic Function

$f(x) = a(x - r_1)(x - r_2)$, where $a \neq 0$ The x-intercepts are located at $(r_1, 0), (r_2, 0)$.

Steps for Writing an Equation of a Quadratic Function

Step 1:

Step 2:

Step 3:

Step 4:

Practice: Complete the practice problem(s) in the space below. Be sure to check your work.

Translating from Tables and Graphs

Writing Equations from Tables

The x-intercepts, if there are any, occur where the function value is ____, while the y-intercept occurs where the value of ____ is _____. To identify the vertex, locate the _____ of the function.

Writing Equations from Graphs

Writing the equation of a quadratic function from a graph involves identifying the key features from the data. The _____, if there are any, _____, and the _____ may be identified from the graph.

Practice: Complete the practice problem(s) in the space below. Be sure to check your work.

Writing Equations for Real-World Quadratic Functions

Practice: Complete the practice problem(s) in the space below. Be sure to check your work.

Please use additional paper as needed to complete the Self-Check. You may also choose to print the lesson's Sum It Up page.