

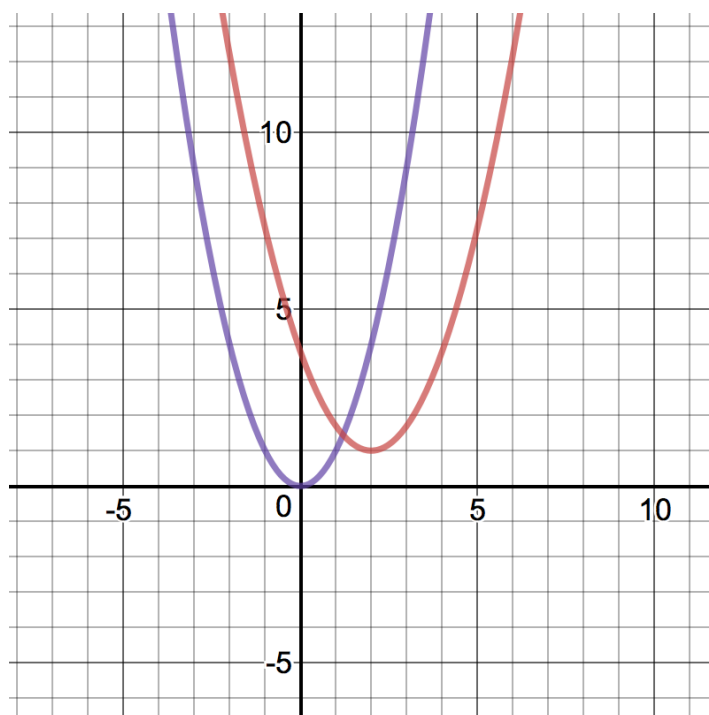
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Classwork: Graphing project

Functions can be transformed in the same way as points were in geometry. The parent function shown in purple in Graph 1 is a parabola with its vertex on the origin. The red parabola has been shifted to the right two units and upward one unit. This translation is written using vector notation as $\begin{pmatrix} 2 \\ 1 \end{pmatrix}$. Using algebraic notation, we write the parent function f and the image after translation, the function g as follows:

$$f(x) = x^2$$

$$g(x) = (x - 2)^2 + 1$$



Graph 1