For the following graph, write a quadratic function in vertex form.

\[ f(x) = a(x - h)^2 + k = a(x - 4)^2 - 2 \]

\[ -6 = a(6 - 4)^2 - 2 \]
\[ -6 = a(4)^2 - 2 \]
\[ -4 = a(4) \]
\[ a = -1 \]

\[ f(x) = -(x - 4)^2 - 2 \]