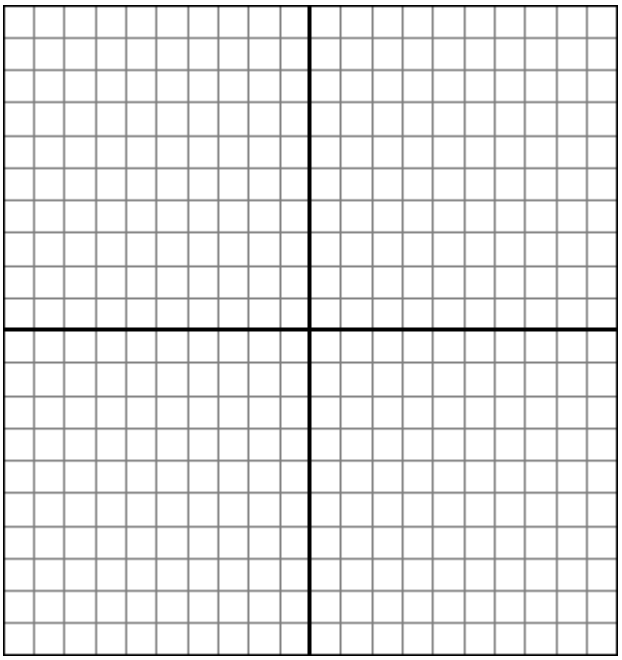
# Precalculus 115, section 3.1 Quadratic Functions

notes by Tim Pilachowski

terminology: The standard, or graphing form, of a quadratic function is $y = a(x-h)^2 + k$. Using this form we can identify the shifts/translations of the basic function $y = x^2$. The reference (vertex) of the basic quadratic, the point (0, 0), would be shifted _____ units _____ , and _____ units_____ .

Thus, the shifted vertex would have coordinates ( _____, _____ )

Example A: Sketch the graph of $f(x) = x^2 - 4x$.



vertex:

standard (graphing) form:

domain:

range:

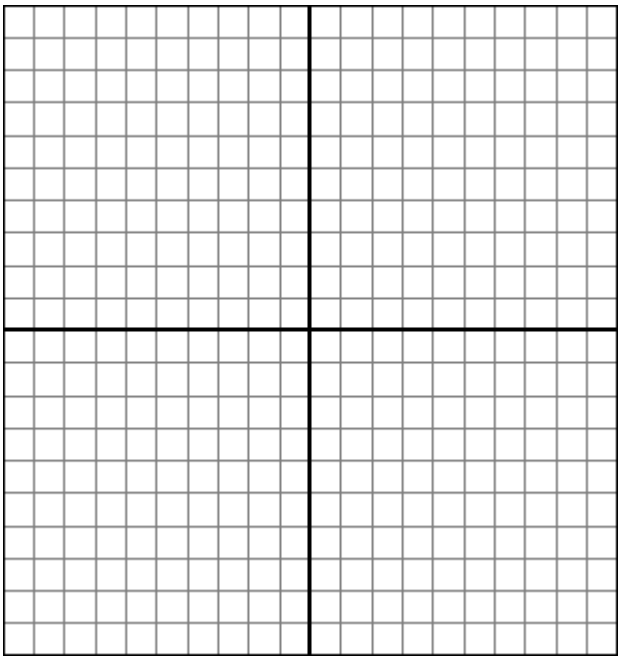
maximum/minimum value of the function:

axis of symmetry:

*y*-intercept:

*x*-intercept(s):

Example B: Sketch the graph of $g(x) = -x^2 + 6x - 3$.



vertex:

standard (graphing) form:

domain:

range:

maximum/minimum value of the function:

axis of symmetry:

*y*-intercept:

*x*-intercept(s):

Example C: Find a function whose graph is a parabola with vertex $(-4, 6)$ and that passes through the point $(-2, 2)$.