

Finding X and Y intercepts of Parabolas

You will need to be able to find the x and y intercepts of each function in order to accurately graph it.

We have already gone over the procedures for finding the x intercepts of a quadratic function.

- *First replace $f(x)$ or y , whichever happens to be the case, with zero. This has the effect of setting the quadratic equation equal to zero. Then find all zeros of the function by factoring, completing the square, or using the quadratic formula. Since the zeros of a function are really x-intercepts, your results will be the x-intercepts of the function. It doesn't matter what form of the function you are looking at, whether it be the general form of a quadratic function, $y = ax^2 + bx + c$, or the standard form of the quadratic $y = a(x - h)^2 + k$. the procedure is the same.*

Finding the y intercept depends on what form of the quadratic function you are looking at.

- *Given a quadratic function in $y = ax^2 + bx + c$ form, substitute zero for x, and solve for y. In this case, the result is simply $(0, c)$. Since both a and b have the variable x next to them, the only thing left is the constant c . Remember, if the constant c is not there, that means it is zero, and the y intercept is at the origin.*
- *Given a quadratic function in $y = a(x - h)^2 + k$ form, substitute zero for x and solve for y. Be careful! Don't assume the constant k is the y-intercept. That is the y value of the vertex. You must find the y-intercept arithmetically. There is no shortcut as with a quadratic in general form.*