

when i know the y value of the vertex, how do i find the x value?

If you know the y-coordinate of the vertex of a quadratic function, you can use the vertex form of the function to find the x-coordinate of the vertex.

The vertex form of a quadratic function is:

$$y = a(x - h)^2 + k$$

where (h, k) is the vertex of the parabola.

If you know the y-coordinate of the vertex, which is k in the vertex form equation, you can substitute it into the equation to get:

$$y = a(x - h)^2 + k$$

Simplifying this equation, we get:

$$y - k = a(x - h)^2$$

Dividing both sides by "a", we get:

$$(y - k) / a = (x - h)^2$$

Taking the square root of both sides, we get:

$$\sqrt{(y - k) / a} = x - h$$

Adding "h" to both sides, we get:

$$x = h \pm \sqrt{(y - k) / a}$$

So, to find the x-coordinate of the vertex, you can use the formula:

$$x = h \pm \sqrt{(y - k) / a}$$

where "h" is the x-coordinate of the vertex, "k" is the y-coordinate of the vertex, and "a" is the coefficient of the x^2 term in the quadratic function.