

## Graphing Quadratic Functions

$$y = f(x) = ax^2 + bx + c$$

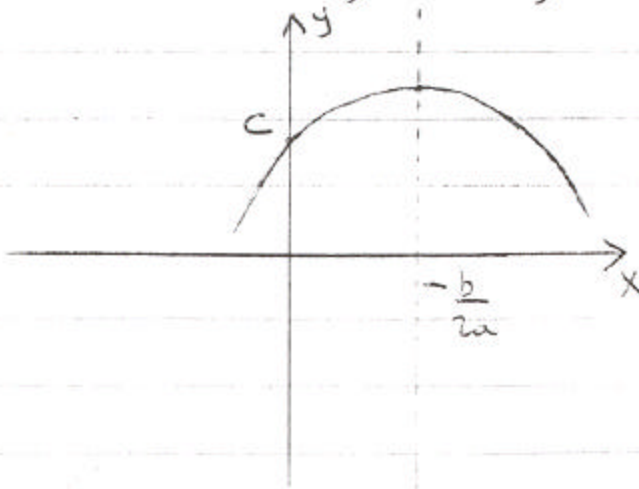
① This is a quadratic function. It graphs as a parabola. If  $a > 0$ , it opens up. If  $a < 0$ , it opens down.

②  $f(0) = c = y$  intercept

③  $x = \frac{-b}{2a}$  is the axis of symmetry.

$$y_{\text{vertex}} = y_v = f\left(\frac{-b}{2a}\right)$$

④ Pick a couple of values of  $x$  on one side of the axis of symmetry. Make a table of values. Plot the points, and mirror them across the axis of symmetry.



Here  $a < 0$ .

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

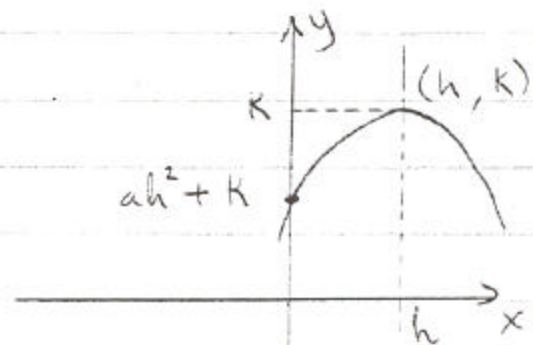
① Same

②  $f(0) = ah^2 + K = y$  intercept

③  $x = h$  is the axis of symmetry.

$$y_{\text{vertex}} = y_v = K$$

④ Same



Here  $a < 0$ .