$$y = -4(x + 3)^2 - 2$$

Can be seen as:

$$y = -4(x - (-3))^2 + (-2)$$

The negative sign causes an x-axis reflection.

The 4 causes a vertical scaling by a factor of 4.

The -3 causes a horizontal translation to the left of 3 units.

The -2 causes a vertical translation downward of 2 units.