

Rewrite in vertex form

$$y = a(x - \underline{h})^2 + \underline{k}$$

$(\underline{h}, \underline{k})$

$$f(x) = -3x^2 - 6x$$

$$\begin{aligned} & \stackrel{(2 \div 2)}{=} -3(x^2 + 2x + 1) + 3 \\ & = -3(\underline{x+1})^2 + \underline{3} \end{aligned}$$

$$(-1, 3)$$

$$g(x) = x^2 + 6x + 10$$

$$\stackrel{(6 \div 2)}{=} (x^2 + 6x + 9) + 10$$